FIRST TESTS

1962 BUICK V-6

IND

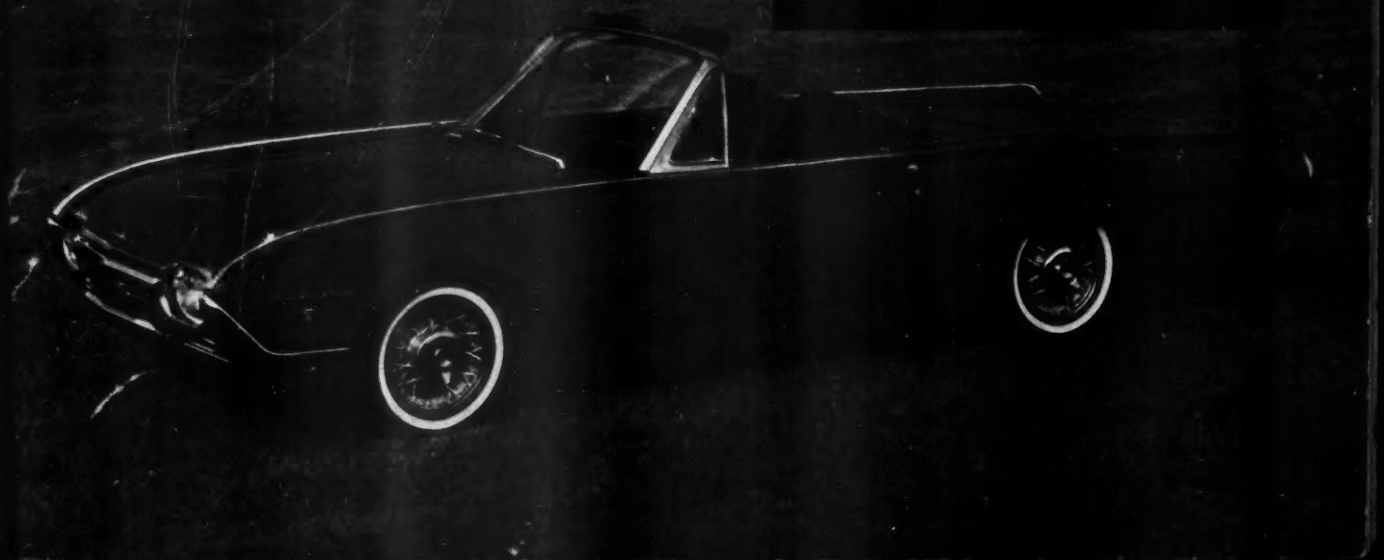
MOTOR TREND

DECEMBER 1961 35c

Complete Competition Coverage: Bonneville Speed Week • Stocks at National Drags • Darlington 500

ROAD TESTS: DATSUN SPORTS CAR, DATSUN SEDAN DRIVER'S REPORT: NEW TRIUMPH TR-4

NEW LOOK FOR THE T-BIRD



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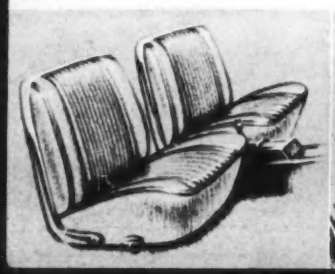

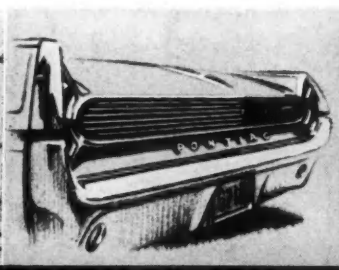

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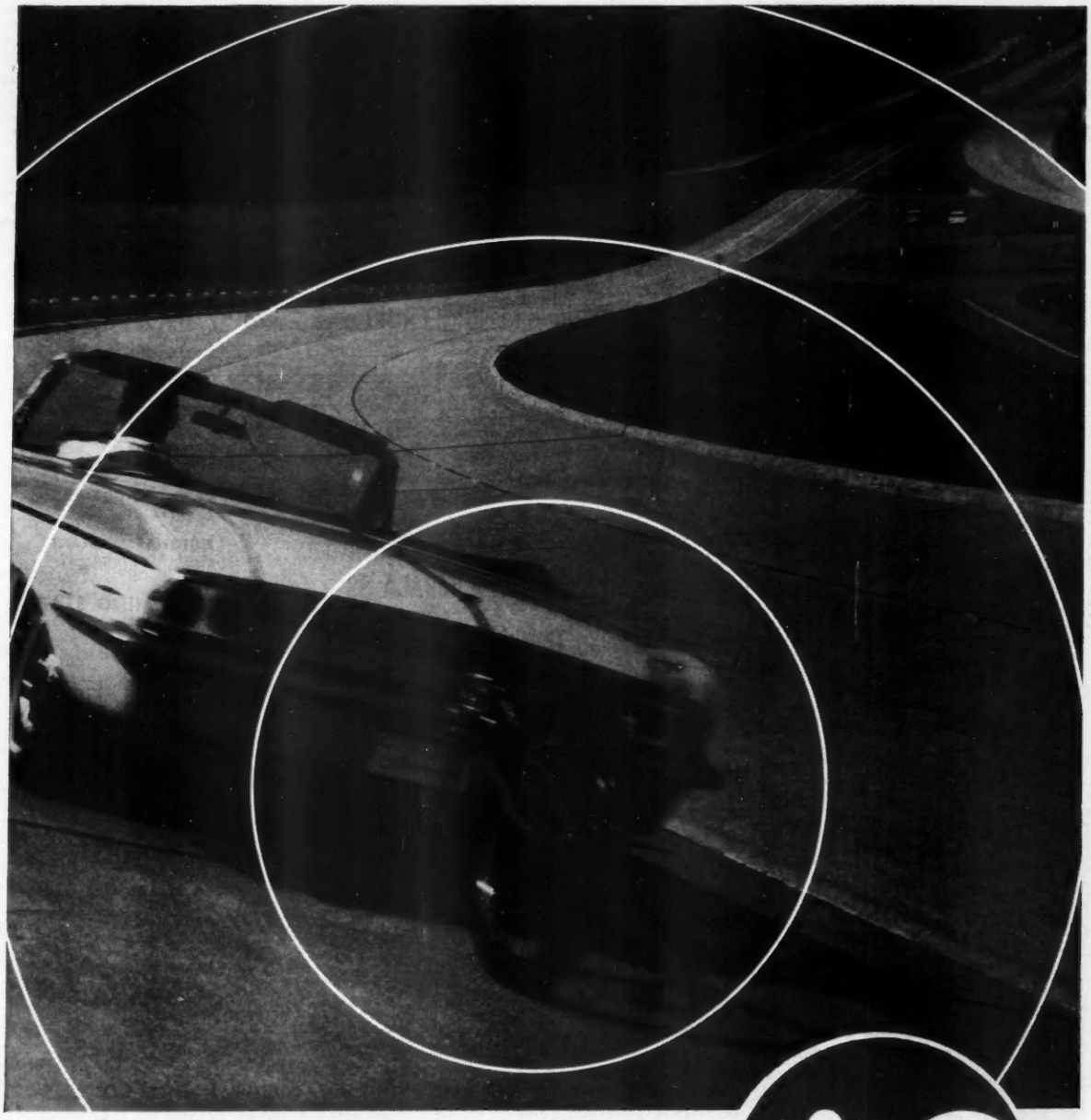

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Motor Trend

DECEMBER 1961 **VOLUME 13, NO. 12**

Road Test BUICK SPECIAL V-6 ____ 22
New TRENDS in '62 ENGINEERING ____ 28
NEW LOOK FOR THE T-BIRD ____ 34
Mercury's Meteor ____ 38
This is BONNEVILLE ____ 40
Driver's Report CHEVY II ____ 48
Driver's Report CHEVY IMPALA SS ____ 50
"Stockers To The Line" ____ 52
The Southern 500 ____ 56
Road Test DATSUN SPORTS CAR and SEDAN ____ 58
Driver's Report The All-New Triumph TR-4 ____ 64
MAD DOG IV ____ 68
European Report ____ 70
Table Racing ____ 78

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DEPARTMENTS

The Editor's AUTO-GRAPHS ____ 6
Letters ____ 8
SPOTLIGHT on DETROIT ____ 14
Product Trends ____ 16
CAR CLINIC ____ 74
Sell 'n' Swap ____ 80

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The Editor's AUTO-GRAPHS

IT'S THAT TIME of year again! All of the Detroit offerings for 1962 have been announced and presented to the automotive press and dealers with a great variety of fanfare, and MT's technical staff is geared to an enthusiastic and rigorous testing program beginning with the new V-6 Buick Special in this issue.

This is also the time of year when we are deep in the study and evaluation of outstanding progress in design developments from our domestic auto makers in preparation for MOTOR TREND's Car of the Year award. This is not an easy job, and it becomes more difficult each year as the fierce competition among auto makers continues to improve each manufacturer's product to the point where it is difficult to pick just one from a host of outstanding candidates. Watch for the award announcement shortly after the first of the year.

Despite the emphasis on new . . . new . . . new . . . which has seldom failed to sell cars, American automobiles are getting better and offer a greater selection of sizes than ever before. Always on the alert for additional sales potential in every price and size bracket, Detroit auto builders have been able to introduce new concepts, design and build some new engines and improve existing proven mechanical components.

* * * *

SPEAKING OF ENGINES, there have been some proposals bandied about concerning a new American road racing formula for open-wheeled, single-seater cars. The idea of an American "Senior Formula" sounds good and always has the tantalizing prospect of "cheaper" racing for the owner or builder. Proponents of the new formula are strongly in favor of engine limits of slightly over 300 cubic inches. As attested by the European-derived Formula Junior cars, whose engines cost more than the cars from which they are allegedly taken, there is no such thing as cheaper racing when the rules are so flexible that "cost is no object" builders can dominate starting grids.

Three hundred-plus cubic inches seems rather large for this formula concept, as we recall not too many years ago some of these same exponents were pretty vehement about "Why doesn't Detroit produce a good small engine?" Well, Detroit is producing some good small engines, with a wide selection, from air-cooled flat Sixes, to in-line Fours and Sixes and V-6 and V-8 configurations. Many offer their powerplants in aluminum or lightweight cast iron and it seems sensible to think of a formula developed around these engines.

We suggest an absolute maximum of 225 cubic inches, a displacement-to-weight ratio of 100 pounds per six cubic inches, which would give even the smallest Detroit engine an even break, prohibit overhead cams and superchargers, but allow extensive head modifications as long as stock heads were used — then fill the tank with pump gas and go racing.

Stock car racing, both closed-course and quarter-mile drags, has certainly not escaped the attention of Detroit, as performance also sells cars. Why couldn't this formula have a similar effect?

* * * *

FIERCE COMPETITORS in a very active homeland market, the Japanese auto makers are determined that there is a place in the American market for their cars. The Nissan Motor Company, Ltd., of Tokyo, makers of the Datsun, have introduced a sports car and a family sedan, the Fair Lady and the Bluebird, included in our December road tests. These cars show an amazing combination of features from English, German and American cars, including the very tricky name of "Bridgestone" for their tires.

* * * *

AIR POLLUTION, once a Los Angeles product that the Chamber of Commerce was able to keep well hidden under a mountain of bathing beauties, movie stars and Sunkist oranges, has become a national problem. Increasing traffic congestion in our bulging metropolitan areas and the projected increase of gasoline- or diesel-powered vehicles in the next 20 years just doesn't provide enough pure air to successfully dilute noxious exhaust pipe and crankcase emissions. Researchers are hard at work trying to solve the problem with some device that will prevent us from becoming victims of our own progress, and a ripe plum is waiting to be picked by some lucky inventor. Current thinking is that an effective exhaust attachment to retail for about $100 would be ideal. On the basis of eight million motor vehicles in California alone, this is some plum!

* * * *

THE SMILING CHARACTER holding on to the "O" at the top of this column is your new editor, who frowns on dull portraits of editors staring out into space. Further down in this column is the first and last portrait of the editor that will appear in this column, but we expect you'll see a lot of us in MT's road tests.

Charles Nerpel
Editor

NOBODY KNOWS ENTHUSIASTS AS WELL AS CHEVROLET

After all, who introduced the four-speed all-synchro transmission (one of the world's best) in American cars? Chevy. Who started the recent trend to bucket seats? Chevy did. Who built a real honest-to-goodness sports car back when hardly anybody else on this side of the Atlantic even knew what they were? Chevy again. Who pioneered Fuel-Injection for American cars? You guessed it.

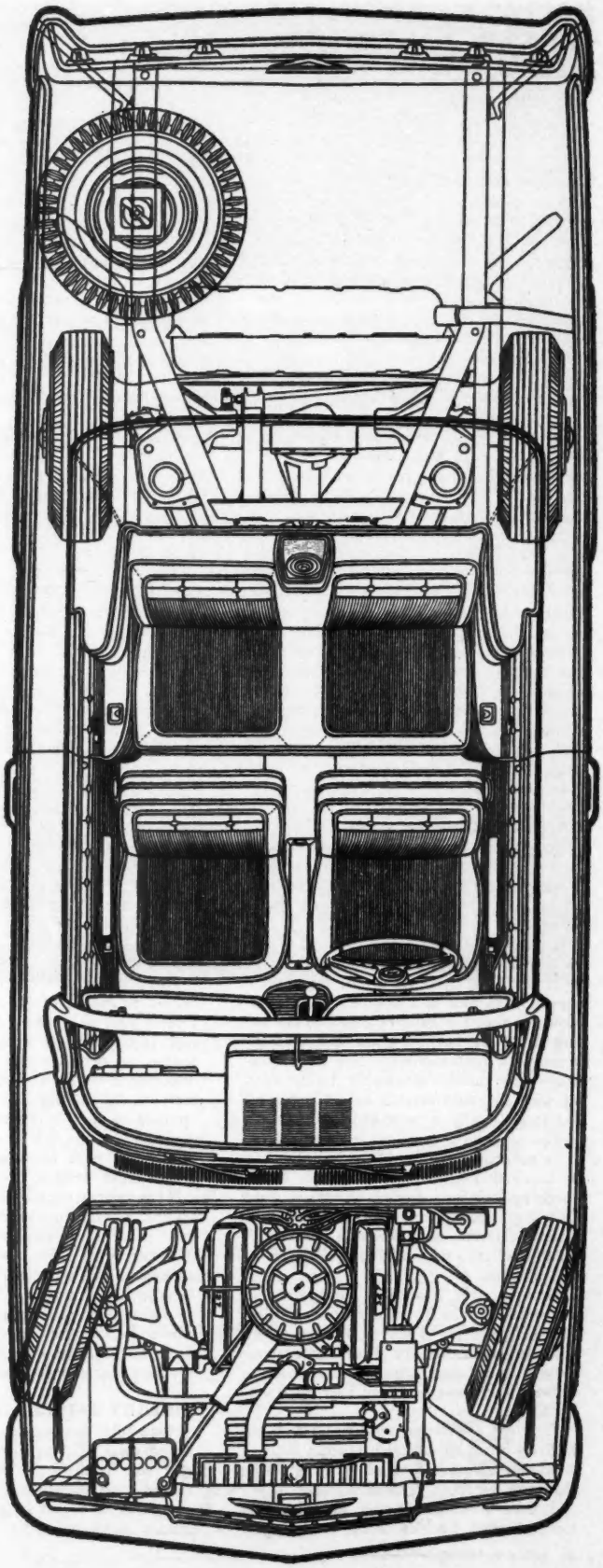
Right now, Chevrolet builds a wider variety of models for discerning drivers than anybody, except perhaps a couple of European one-of-a-kind custom builders. Everything from frolicsome two-seaters to full-size family sedans, all available with a fantastic array of equipment designed to suit the more demanding driver.

Imagine a car like the Impala Sport Coupe with such optional-at-extra-cost equipment as bucket seats, four-speed box, 409-cubic-inch engine, Positraction, heavy-duty shocks and springs, and sintered-iron brakes. It'll out-handle and out-run quite a gang of good automobiles, and it'll carry you, your wife, your mother-in-law, two kids, a bird cage and a springer spaniel in the process.

If you're a one-car man with a ten- or twelve-car appetite, try a combination like that —it's not bad, and it'll sure leave a trail of disillusioned sports cars in your wake.

Chevrolet Division
of General Motors,
Detroit 2, Michigan.

CHEVROLET



Letters

WAITING FOR THE V-6

I have read with great delight in a recent issue of MOTOR TREND that General Motors is going to put the V-6 in an automobile. I think this is one of the best steps forward that Detroit has made in many a year, with the possible exception of the rear transmission of the Tempest. I consider the V-6 a new and fresh approach to automotive engines.

Ever since I read your article, I have been waiting to see what GM would do with such a potential powerplant. It would seem that the V-6 would be an ideal experimental engine, and I feel pretty sure that it would be a remarkable performer upon further development. It would seem a shame to let such a new and radical advance "die on the vine" like so many other things to come out of Detroit.

I have always been a Ford or Ford product owner, but I have always said that the day that Chevrolet put the V-6 in a passenger car, that is the day I would change to a Chevrolet or other GM car. I feel confident that the V-6 engine coupled to the rear transmission from the Tempest would satisfy the most discriminating of car buyers.

William H. Davis Baton Rouge, La.

A road test of the 1962 Buick Special with the new V-6 engine appears on page 22 of this issue.

WHAT IS PROGRESS IN DESIGN?

You say in your "Memo from the Editor" in the October issue that "it's quite clear the car makers in Europe will maintain this (design) lead in progress in the years ahead."

I believe that the word "design" when applied to an automobile must refer to more than just the lines of the car as they appeal to current and popular vain tastes. However slick the appearances, I do not see how a car can be of a good design unless it provides comfortable and safe transportation — this cannot reasonably be brushed off with an easy reference to a Greyhound bus locked up in a bank vault, etc.

The purpose of good car design, as I see it, is generally to accomplish the following in about this order of importance: transportation, comfort, ease of handling, good visibility, protection from the elements, safety in traffic and cornering, reliability, durability, etc., with a gentle massage of the esthetics.

Granted, this is a broad application of the word. But in its most narrow application I fail to see how you can make the absolute statements you have made about present and future comparisons in design between cars mass produced in Europe versus Detroit cars.

It is my considered opinion that if objectivity could be achieved, Lincoln or Ford would be considered to be a better design than any European car made.

I shall continue driving my air-conditioned T-Bird. You, of course, can continue huddled up in a Porsche, Jaguar, or whatever you drive, making snide remarks about what you regard to be the excess chrome on my car.

C. E. Boone Newport Beach, Calif.

DON'T BLAME THE MANUFACTURERS!

I can't help but comment on your interesting editorial concerning European advanced design. It seems to me that the reason for this situation is the customer — not the manufacturer.

Anyone who becomes hopefully excited about an annual model change that means nothing more than a loss in depreciation to him is not a rational person. Why should Detroit waste money on advanced design, when new nameplates and pseudo-bucket seats will do the trick?

In the October issue you report a $1200 French car with a sealed cooling system and the fact that Cadillac is waiting another year before installing a simple alternator.

When you test an American car with more quality, lower maintenance costs and less model changes than my Peugeot 404, let me know. Then I'll buy a Detroit product, too.

N. M. Nokes Brunswick, Me.

CASE FOR THE BIG CAR

I read with interest your recent article, "The Case for the Big Car." I'm not in the car business, and I drive small cars, but I don't really feel that we have to justify the big cars. I believe those who prefer the big cars would buy them anyway.

The small car has made a second car more economical and handier for many of the big-car set and has made a new car possible for many who would be forced to buy a used big car, were it not for the compacts.

Personally, I actually prefer the six-cylinder versions of the larger models to the compacts. Those with the financial ability will buy the big car. I expect to eventually.

Jon E. Tinsley Milton, Fla.

MORE ROAD TEST DATA

As an automotive enthusiast and a member of the Society of Automotive Engineers, I enjoy your publication a great deal. However, it would be of further interest if your articles on new car tests would give equal importance, or even mention, how long a set of brake linings is expected to last as opposed to how many panic stops can be made before the brakes fade, as very few of us ever have occasion to slam on the brakes eight times in succession.

Also, approximate life expectancy of fuel pumps, voltage regulators and spark plugs may be of more interest to a prospective new car buyer than how fast the car can accelerate in a quarter of a mile.

George R. Perryman Houston, Tex.

Although we agree that such information would be of great interest to prospective buyers, it is impossible to get this data on the new models which we test.

VISIBILITY RATING

One point has occurred to me that might be of great help to many people and one that you have overlooked in reporting on the test cars — and that is visibility.

I think it would be great if you would always make it a point to compare or at least report the visibility characteristics of all the autos you test. This is one point that I certainly examine a car for, and know that others do as well. Visibility is vital — I think it is one of the most important safety features. However, it seems that most of our American manufacturers have somehow neglected it.

Specifically, I would like to see an American car built without that bothersome little ventilator window in front, which is not only a noise-maker at highway speed, but a costly block to good vision.

Donald M. West Granada Hills, Calif.

SHADES OF RAYMOND LOEWY!

Shades of Raymond Loewy . . . I'll be darned if the 1962 Dodge doesn't look as if it jumped right off the drawing board of Mr. Loewy way back in 1952 as a big brother to the now famous Studebaker of that vintage. A mighty handsome new automobile it is too — but why did it take mighty Chrysler ten years to find out little old Studebaker was on the right design track way back then, even though Studebaker also managed to get sidetracked and is just now finding its way back?

Your heated debates concerning the merits of foreign cars vs. American automobiles is of great interest to me. As a car enthusiast I've owned my share of both. Presently I drive one of the most popular of the big luxury vehicles.

I truthfully feel that in this price bracket (with the exception of the two Jaguar sedans) both the Lincoln and Cadillac are far superior in most respects to European transportation in the luxury field, even those costing double the price of their American counterparts.

Henry Knox Los Angeles, Calif.

LOST: PRIDE OF WORKMANSHIP

During the latter part of 1960 I followed the numerous reports in your excellent magazine on the Pontiac Tempest with a great deal of interest. It figured, theoretically at least, to be exactly what I was looking for.

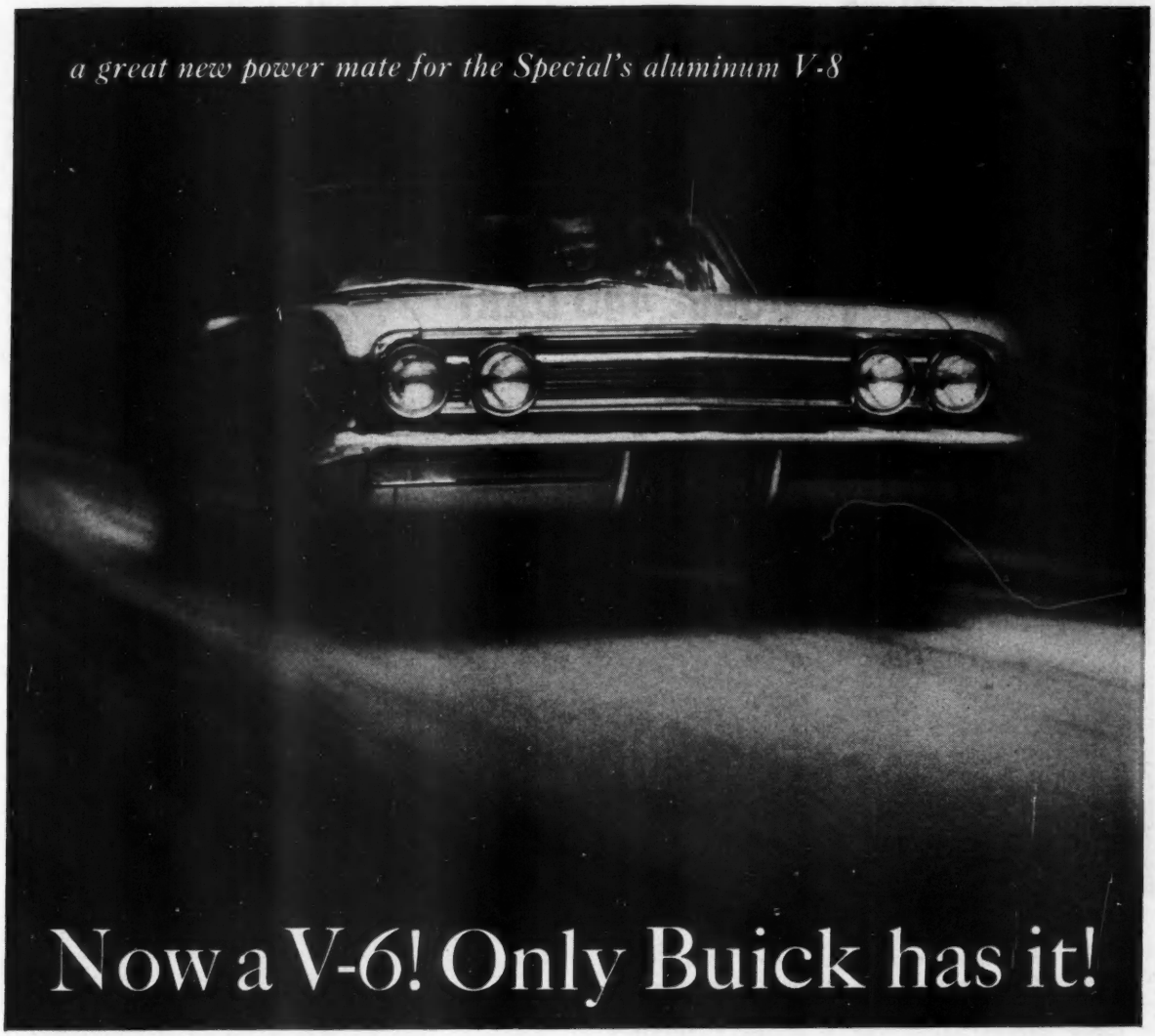
After personally road testing no less than five different Tempests, all with automatic transmissions, I was completely sold on the little aluminum V-8.

Getting down to the point, I found 21 different assembly faults or mistakes on the Tempest I bought. The most serious of these were transmission troubles which required no less than five trips to the dealer before he could be convinced there was something wrong with it and would tear it down.

We are asked to help our country by buying American products made by Americans in America. I go along with this and will support it whenever possible. Unfortunately, the Americans who are making the American automobiles have no pride of workmanship whatsoever. It makes no difference what kind it is or how much you pay for it — pride of workmanship in an American car is almost a thing of the past.

The meticulous workmanship of a number of the foreign imports is a prime example of pride of workmanship and is as great a single factor in their success here as is the mileage factor over that of the domestics.

Dave Gury *continued on page 10*



Six for Savings—V for Voom. It was natural that it came from Buick. Natural that Buick developed the successor to the in-line six-cylinder engine...*the V-6!* A V-6 you can now get in the new 1962 Buick Special (in convertible, sedan or station wagon models). A V-6 that has 140 to 179 pounds less weight than in-line sixes of comparable power. A V-6 that gives you the V-smooth, V-lively *Voom* of big cars *plus* gas economy that challenges the compacts. A V-6 with the shortest, most rigid block and crankshaft in any American 6-cylinder car.

Why is it natural that this great engine should come from Buick? Because it was Buick which also developed an *aluminum V-8* which you can also get in the Buick Special. This is the V-8 that gives you sizzling go, yet swept its class in 1961's Mobilgas Economy Run against the country's top drivers. It's natural that it should come from Buick, too, because so many other great automotive advances *have* . . . such as today's safe, simple directional signals . . . fin-cooled aluminum brakes . . . the first no-shift transmission . . . the first hardtop. So here again you have exciting proof that when better automobiles are built, Buick will build them. Buick Motor Division—General Motors Corporation.

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IN THE JANUARY MOTOR TREND

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Letters

continued

NOT ON EVERY HOOD

I am writing this letter in hopes of easing the mind of Robert N. Hart of Lee Hall, Virginia, who wrote that he looked all over his hood release for the Chevy emblem and found none.

On the standard bumper and grille setup on 1961 Chevrolets, the hood release is located in the middle of and below the grille. There it is visible and quite easy to get to. However, on the Chevys with the optional bumper guard-grille bar setup, the normal hood release is thoroughly inaccessible. For this reason, an extension is needed and is used.

Instead of having a bare piece of metal protrude between the bumper and the grille bar, Chevy designers stuck a knob on the end, and there took advantage of space and applied a Chevrolet emblem.

On Mr. Hall's Impala, which undoubtedly has the standard setup, there is no emblem – just a hook-type hood release below the grille.

Jim Hannah — Muskogee, Okla.

WHO NEEDS "BURST OF SPEED"?

One of the letters in your October issue pointed out some of the absurd thinking on the part of the American motoring public. Russell Wright, of Compton, California, mentions that VW's cruising at 70 mph have all the strings out and nothing left for an emergency burst of speed.

In the 50,000 miles I've driven VW's in the last three years I have yet to see the time I needed a "burst of speed"– for the simple reason that if I am about to pass another car and one shows up unexpectedly coming toward me, it is much safer to back off and drop back in line. This is possible because of the brakes, which are better than American ones, and the fact that I can change lanes completely and safely almost instantaneously, due to the better steering and handling of "der bug."

Why are imports of better quality? I don't think it's so much a matter of design, etc., as the fact that the man who works on U.S. assembly lines couldn't care less if he did a good job, and if he can do a sloppy job and get paid for it, he will.

After having seen German men work on cars and then returning and seeing the mechanics here, I hate to even take mine in for an oil change.

Rev. Wayne Gilbert — Luray, Kan.

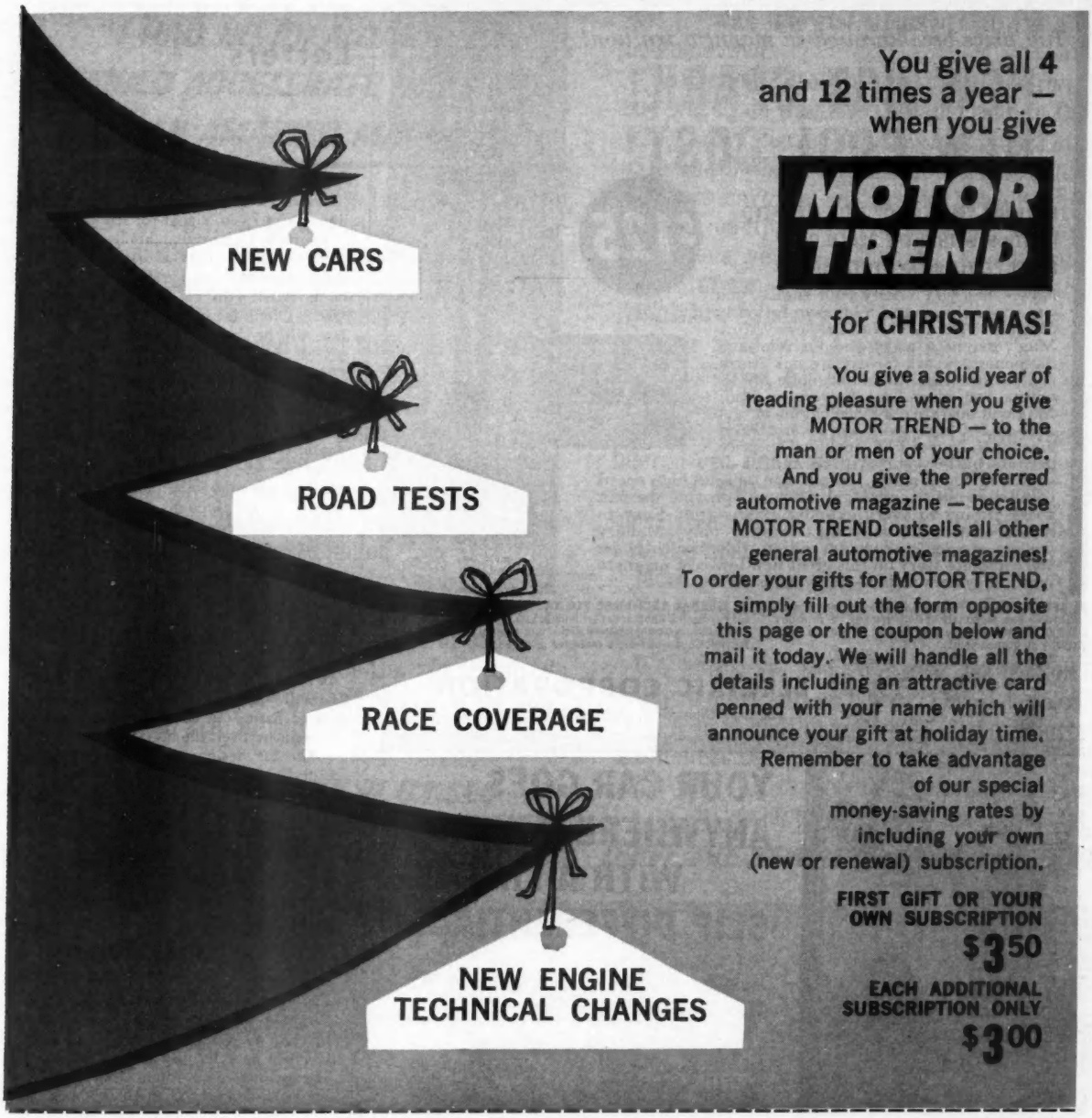
SUGGESTED IMPROVEMENTS

I think the Volkswagen is just about the most satisfactory small car available to the American public. It has almost everything you need.

There are, however, a few improvements that should be made: 1) The rear quarter windows should be made to swivel out as on the VW buses. 2) The windshield should be convex instead of flat. 3) There should be a dashboard-mounted fuel gauge. 4) There should be a fresh air vent and a heater duct to the rear seat. 5) The dashboard controls should be labeled.

Fred Hoffman — Bedford, Mass.

continued on page 12



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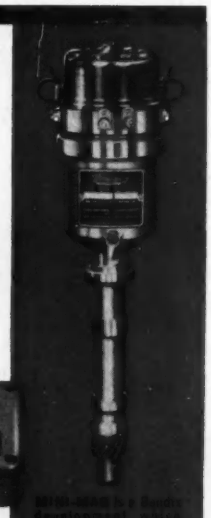


Now, when you modify your engine, you can afford the magneto ignition formerly considered a luxury. New Mallory "Mini-Mag" magneto gives you high-voltage, high-energy spark for extra-quick starts, top performance, incredibly long life for points and plugs. An 8-cylinder Mini-Mag will operate a 4-cycle engine at well over 10,000 rpm—*and will outlast the engine itself*. Power-Pak, included in price, permits battery starts. (Coil and on-off switch for push starts.) Small cam, special high speed contact point, centrifugal advance provide perfect spark timing to every cylinder at any rpm. Easy to install, easy to adjust (point clearances only). Mallory dealers, service stations are nation-wide. See them for the complete story on this great new low-cost magneto ignition system today—or write us direct.

APPLICATIONS: Available for nearly every kind of car, truck, bus, stationary and marine engine. Provides 100,000 miles (or equivalent hours) of service with virtually no burned points.

LIBERAL EXCHANGE POLICY: You can "move" the Mini-Mag system to another car for only $45.00, by returning the unit to your dealer for complete re-building and adaptation at the Mallory factory. Thus, you have a **protected** investment.

Mallory ELECTRIC CORPORATION

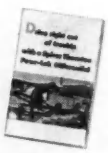
12416 Cloverdale, Detroit 4, Michigan

YOUR CAR GOES ANYWHERE, ANYTIME— WITH A LIMITED SLIP DIFFERENTIAL!

Protects You From Getting Stuck In Mud, Sand, Snow or Ice!

In fair weather or foul—on or off the pavement — when your car's equipped with a limited slip differential you take off and go. This amazing device automatically directs the power to the rear wheel with the greater traction. It keeps you out of trouble and keeps you on the go. . . . So, order your next car factory-equipped with a limited slip differential and enjoy the thrill of peak performance.

WRITE TODAY for your free copy of booklet describing limited slip differential—how it works and which cars offer it.



DANA Spicer **DANA CORPORATION**

Toledo 1, Ohio

OR ICE . . . YOU GO WITH LIMITED SLIP DIFFERENTIAL!

Letters

continued

FIELD DAY FOR DESIGNERS!

I would like to suggest a third directional light on cars — to signal for straight ahead.

In today's congested traffic, there are many occasions when a driver approaches an intersection with a traffic light at which he is faced with two lanes of oncoming traffic. Oftentimes several cars in the inner lane will be showing a left turn signal, and several in the outer lane a right turn signal. Others, perhaps in either lane, will be showing no signal, and the assumption is that they are going straight ahead.

There are many such situations where it would be helpful, both in expediting movement and as a safety measure, if a driver could *confirm* to other drivers that he is going straight through. A third directional light, centrally located, would enable him to do this.

In this connection, it would seem logical to have the left-turn signal colored red, the right-turn signal green, and the straight-ahead one yellow.

Also, there are many occasions when a driver wishes to signal to another that he may pull in ahead, or to a pedestrian that he will wait for him to cross. A signal that would flash "Go ahead" would be an improvement over the usual hand-waving.

The car designers seem to be obsessed with lights. Witness dual headlights and jukebox rear ends. I should think they could have a field day with these suggestions.

S. P. Mathes Wilmington, Del.

PROOF IS IN THE PRICE

Perhaps if G. P. Keahey of Ramer, Alabama, who states in your October issue that the Ford can't be beat by any automobile, would look at the N.A.D.A. book (used car dealers' book) and check the Ford against Chevrolet, model for model, year for year, he will find out who builds the best car.

The Chevrolet has a fine resale value. Chevys hold their values better — they are marked $50 to $200 above Fords.

If Fords are so well built, why do they lose more each year than Chevrolets?

Edward T. Thornton Kalamazoo, Mich.

GET A SAAB!

The answer to the "elbow-saver" letter by W. C. Gaylord in a recent issue — get a Saab!

It not only has a grille around the fan, which is located back of the engine, but the hood lifts right off so you can get at everything with ease. You can also pull the engine out, bring it in under your arm and put it on the kitchen table, where it is more convenient to play with it.

What other car capable of well over 100 mph can you do things like this to? It takes less than 30 minutes to pull the engine.

Hal C. Batey Jr. Melrose, Fla.

"I HAD NO IDEA DART 440 WOULD ACCELERATE LIKE THIS. IT'S AN AMAZING MACHINE!"

That was Buck Baker talking. He had just taken his first drive in a 1962 Dodge Dart 440. The place was Utica Proving Grounds in Michigan. The time: July 27, 1961. We asked Buck to test Dart 440 and give us his reactions.

Buck calmly stepped into the car. Started it up. (Dart 440's new, quiet high-speed starter kicks over an engine about as fast as you can snap on an electric light.) Buck tromped on it. Dart 440 dug out. Socked Buck back in his seat as it leaped off the line. Even an experienced driver like Buck Baker, twice champ on the hot NASCAR circuit, was astonished.

"I had no idea it would accelerate like that," he said.

But Buck's a goer. After a couple of orientation laps, he buried the needle. "It handled beautifully," he said. "I could drive with two fingers and an arm in the door." And that's just what he did!

FROM ZERO TO SIXTY IN 8.1 SEC. Ace dragster Don Garlits, current holder of the "1320" record, is no stranger to high speeds. But he was likewise amazed. "Quite a bomb!" he remarked.

We asked auto authority Bill Carroll to put the watch on Garlits. That particular Dart 440 was hardly geared for dragging—3.21 standard axle and 3-speed automatic with 361 cu. in. V8. A 4-door hardtop, with radio, heater and power assists, equipped for street use. Under these conditions, you can see that the test was pretty much informal. Just the same, Garlits popped from zero to sixty in 8.1 seconds—ate up the quarter mile in 15.4 seconds.

"Very good power-to-weight ratio," Garlits observed enthusiastically.

It's 11 to 1, in fact. That's because we engineered out dead weight. Left only the muscle in Dart 440. With less dead weight, there's more live action. More mpg, too. We call Dart 440 the first of the Action-Economy cars.

More guts, less gas.

"Anyone would have lots of fun in this car," Garlits said.

We think so, too. We also think you'll be seeing a new set of wheels on the poles this year, a new challenger on the lines. Dart 440. "An honest car," Bill Carroll describes it.

You've got to drive what's happened to Dodge. It's an enthusiast's kind of car all the way.

DRIVE THE NEW LEAN BREED OF DODGE.

SPOTLIGHT Forecasts.

by Don MacDonald

New in Steering . . .

Detroit motorists are used to seeing unusual prototypes pull up alongside them at traffic lights. After all, this is the center of such goings-on. But when a test car seemingly lacks a steering wheel, it draws a few stares.

Such a car has been seen frequently in recent days. This otherwise ordinary 1961 Cadillac really does have a steering mechanism — out of sight only because it sits like a Ouija board on the driver's lap. Unlike the Ouija board, however, there is no guesswork in controlling the car.

Mounted on the board are two interconnected knobs, each about four inches in diameter, that actuate the standard Cadillac power steering mechanism. A chain-coupling mechanism enables the driver to move either one or both knobs to control the car. The whole control mechanism can also be pushed upward for ease of entrance and exit.

A little research indicates that this unique device is tentatively slated as an option on the 1963 Oldsmobile Starfire. The Starfire, as you know, features a floor-mounted control for its Hydra-Matic transmission and it is thus a convenient choice to mount the 14 by 18-inch board. Such a device in the front compartment of the usual car would leave little room for a conventional shift lever. The Cadillac test bed, incidentally, had an experimental pushbuton transmission that conveniently accommodated the outsized steering controls.

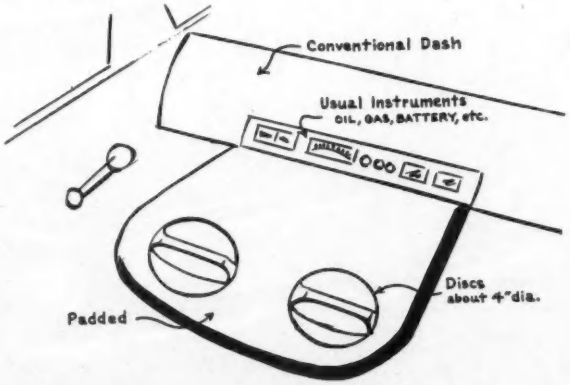
Of course, General Motors Research personnel will not comment officially upon this development, or, in fact, even admit its existence. However, automotive control mechanisms of the future and the present are no better than the person behind them. GM's effort to have draftsman Joe and stenographer Mary try this one out in traffic obviously accounts for the leak. But they learned from these tests that drivers of average skill chosen at random can become proficient in this type of control in a maximum of five minutes.

Such ease of familiarization was not true of an earlier steering aid called the "Unicontrol" that was also developed by GM Research. This device used an aircraft-like joystick to control steering, braking and acceleration. It was mounted in one model in the middle, and on another, on the driver's left. Motion to either side steered the car, forward motion actuated the accelerator and rear pull past dead center applied the brakes. Some "average-type" persons — the same stenos and draftsmen mentioned above — never were able to become proficient in this four-dimensional type of control. Even with the few that did, there was always some doubt as to their reactions in an emergency.

The new device is restricted to the steering function, and the motions required, though abbreviated, are the accustomed ones. Conventional brake and accelerator pedals are retained.

The unit mounts in place of the usual steering wheel on the standard column. No change whatever is required in the specifications of the hydraulic and geometric elements in the steering gear below that point.

Is this the unique equipment that will be offered in the driving compartment of the 1963 Oldsmobile? These sketches are based on unofficial reports on a new General Motors steering experiment that is now in the trial stage. The two small knobs in the center control panel have completely eliminated the conventional steering wheel.



ON DETROIT

Facts and Rumors

Driverless Trucks . . .

Talking about automatic steering, remember GM's car, of a few years back, that was controlled by a wire imbedded in the center of the road? Not too many people took this development very seriously. GM personnel responsible traveled to automotive and highway association technical meetings describing the fundamentally simple device, saying essentially that given a few billion dollars, automatic highways are just around time's corner.

It has taken one of the world's oldest, and normally slowest technically, industries — iron ore mining — to see the potential benefit of completely automated vehicles.

Somewhere in Michigan's Mesabi range (the location is a secret) preparations are now being made to control giant Euclid ore carriers by pushbuttons. They will climb up and down a tortuous four-mile grade, loading at one end and unloading at the other, all without immediate human control. To be sure, someone will be pushing the appropriate buttons, but as one source described the economics of the operation, a few thousand unused coffee breaks will pay for the whole installation. Driverless trucks, with 20 tons of ore aboard, don't stop for coffee.

Economy Compacts? . . .

Leaving automation for the moment, someone recently pointed out the fantastic fact that nearly 400,000 compact cars were sold this year equipped with bucket seats. Such an option with attendant trimmings puts these vehicles into what used to be the low-priced field, namely about $2300 delivered, even if your brother-in-law is a cousin of the dealer.

Even more amazing, assuming that compact cars were created to satisfy a national economy psychosis, is the fact that very few are not now available without extra exhaust pipes, carburetor venturis, and compression ratio. One, even, offers an optional supercharger coupled to water injection.

This corner wonders where we are headed, and so do auto makers. Obviously, everyone is trying to make a different car for everybody and just as obviously, some brands next year are going to be hurt. One company put its mix into an electronic computer to see how many unlike vehicles could be built, and the machine ground away until the answer, for all practical purposes turned out to be infinity.

Tailpiece . . .

Recent auto-labor negotiations remind us of a tour through Chrysler's fantastic and highly automated, Twinsburg (Ohio), stamping plant. We passed line after line of presses, each rhythmically turning out parts for 1962 models. Occasionally we saw a human, but only very occasionally. Then we came upon a giant, idle press. Someone asked what that one was used for. The inevitable wag replied: "Oh, that one is the shop steward."

Corvair will have a convertible in 1962. Some very reliable sources report that there are Monza convertibles on the GM test tracks right now. The car should be made available to the public later in the model year (probably March). Word is that the delay was caused by the desire to save the initial spotlight for the new Chevy II soft top.

Tire makers are thinking farther ahead than the two-ply casings that are offered for the first time on most of the '62 cars. The manufacurers are already testing single-ply tires.

More turbo-supercharging. That's the guess of more than one industry observer. Units similar to the recently announced F-85 turbo-supercharger are being tested by many makes. Most recent and most exciting: Corvette.

Diesel engines for domestic passenger cars? Chevrolet's new diesel-powered light truck could be the test bed for a passenger car engine. Plymouth already has a number of diesel-powered taxi cabs in operation. This form of power seems much closer to reality than the highly touted turbine since it is much more compatible to Detroit's current production capabilities.

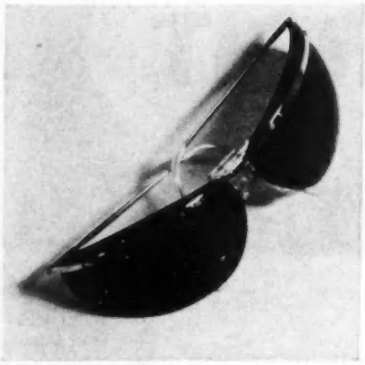
Look for a hot four-speed stick version of the Buick later in the year.

Steel cord is being eyed for use in passenger car tires. This report is still very much a rumor. Only basis for belief is the fact that the steel cord has proven itself in heavy industrial use.

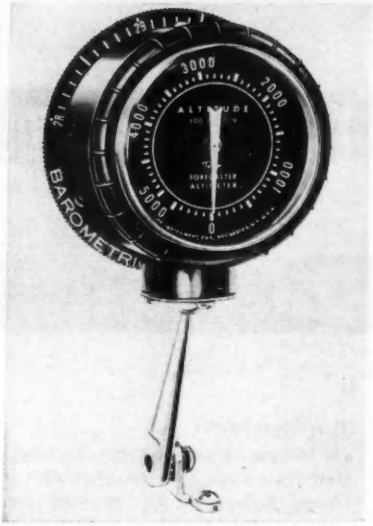
Chromed wire wheels and modified cylinder heads are new options being readied for the Corvair in coming months.

NEW PRODUCTS

WIND BLADE, made of transparent plastic, eliminates car window drafts, allowing driver and passengers to enjoy fresh air. Available for all '60, '61 and '62 models (no hardtops) at $6.95 for compacts, $7.95 for standard makes. Crown Plastics Inc., 210 Mississippi St., San Francisco.

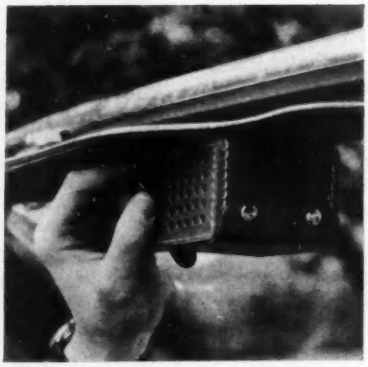


FEATHERWEIGHT glasses for both sun and snow have curved lens which shade the eyes from all directions. They are ideal for all types of driving, also for motorcycling. Available with either smoke or amber lens, for $5.95, from Webco Inc., 218 Main St., Venice, Calif.

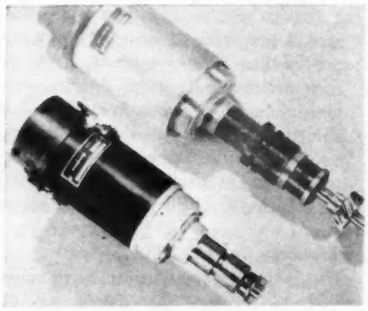


ALTIMETER-FORECASTER, which mounts above the dash, not only tells you how high you are above sea level, but also forecasts the next day's weather. It works on barometric pressure and is easy to mount and use. Priced at $12.50, from D. Corrado, Inc., 26 N. Clark St., Chicago 2, Ill.

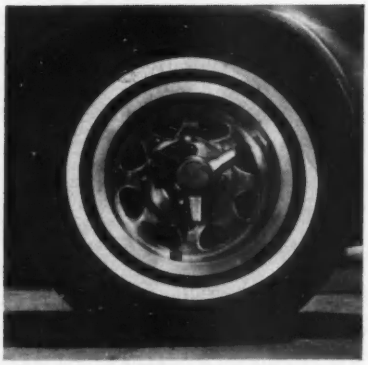
THEFT-PROOF door buttons have been designed for all GM hardtops and convertibles, and some models of the Ford line. Shur-Lok button has no knob, so lifting (as shown in photo) is impossible. Available at $1.49 from Symmes Products, 3226 Cheltenham Rd., Toledo 6, Ohio.



RADAR-GARD, new electronic device, clips to sun visor and "beeps" when within ½-mile of radar zone, warning driver to slow down. It operates on two penlight batteries. Priced at $39.95 and manufactured by Mortronic Radar Detection Devices, 2900 W. Peterson Ave., Chicago, Ill.

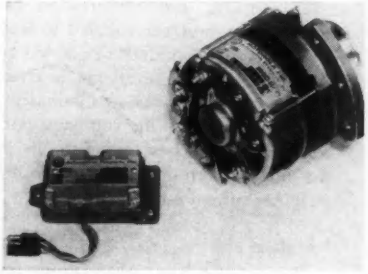


NEW VERTEX magneto ignition system designed specially for imported cars and American compacts, can be easily installed in all four-cylinder engines, whether air or water cooled. It is reported to increase both power and economy. Write to Ronco Corp., Blue Bell, Pa.



SUPER LIGHTWEIGHT 13-inch magnesium wheels, weighing 7 pounds less than standard wheels, are now offered for all compacts. Supplied in kit form – including 4 wheels, 4 knock-off hubs, 16 acorn nuts – for $259, by Moon Equipment Co., 10820 S. Norwalk Blvd., Santa Fe Springs, Calif.

IGNITION FAILURE caused by wet weather can be prevented by "Snap Start" ignition system spray. Power spray can comes in 4-oz. and 8-oz. sizes, which sell for $1.29 and $1.98. Manufactured by Burmatt Industries, 18516 James Couzens, Detroit, Mich. and sold through franchised dealers.



ALL-ELECTRONIC alternator system, which is installed under the hood and replaces the DC generator, charges the battery even while the engine is idling. The system, manufactured by Motorola, consists of an alternator (right), transistorized voltage regulator (left) and an isolation diode.

continued on page 20

TAKE AN ACTION RIDE
IN AMERICA'S NEW ACTION CAR,

THE LARK DAYTONA

Here's where it begins, facing a wood-grained sports-type instrument panel.

Feel the fit of pedals on feet, the properly raked wheel for real driving.

Settle deep into the bucket seat and get ready.

Enjoy the smooth surge of the Lark Daytona's take-off roll...you move! Shift crisply through...

...gears with a solid four-speed box. Streak swiftly down on the sands powered on your way*

...by 225 HP of the four-barrel carburetor Studebaker V-8. Faster and faster you go.*

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Deceleration is dramatic. You stop surely, with control...

...gently. It's easy. Fun. Handsome. Try it.

*OPTIONAL

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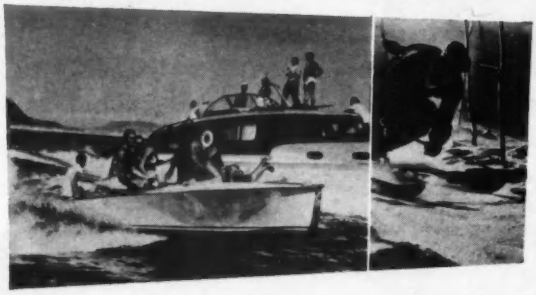
LAS VEGAS

VEGAS VIEW — The real estate with skyrocketing value



$10. DOWN

$10.00 per Month

$795 FULL PRICE

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I wish to purchase _____ site(s) in VEGAS VIEW and have enclosed $10.00 as a deposit on each site. If for any reason I am not satisfied, I understand that my deposit will be returned to me immediately if I notify you within 30 days. Please RUSH brochure and sales contract to me today.

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300
H

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We didn't name it that. Its reputation did!

Here's the 1962 Chrysler that caught fire from seven 300 champion predecessors . . . a breed that inspired an exciting history of its heritage in a three-part book-length article with this title.

Apt title? You know it is when you trigger the H, 380 ho.-blooded horses under its hood are eager for a whip ash getaway. You can hear the power unleashed in a deep-throated growl—feel it in the surge of spine-tingling acceleration.

The H takes to your choice of road with easy stride. Torsion-bar suspension teams with precise power steering—makes you feel you're cornering a two-seater instead of a full-size Chrysler.

And lest you think Chrysler's newest 300 is all performance, sample its four individual bucket seats . . . its supple leathers . . . its thoughtful cluster of gauges—its handsome center instrument console.

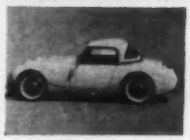
It's a brute. But a beautiful one. And there's nothing quite like it in the world of Grand Touring automobiles.

*"Beautiful Brute" an article by William Caroll in three parts: August, September, October issues of Car and Driver. Soon to be combined in published form.

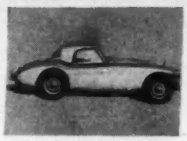
Rare kind of car for a rare kind of man

CHRYSLER 300-H

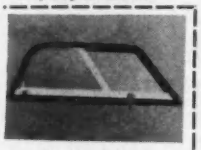
REMOVABLE HARD TOPS
& DOUBLE SLIDING SIDE PANELS


A/H Sprite thru 61

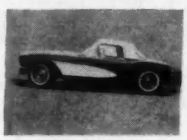
A. Healey thru 61

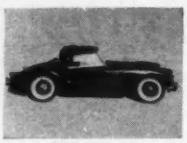

A. Healey thru 56

Porsche thru 61


Double sliding side panel

Sunbeam Alpine Top


Corvette top available for all models


MGA thru 61

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Porsche $54.70	Jaguar $76.43
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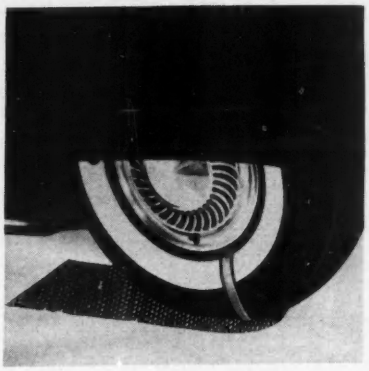
PRODUCT TRENDS *continued*



NEW TRACTION MATS with snap-on spring steel clamps provide positive traction for cars when stuck in snow, mud or sand. Clamps prevent the mat from being shot out by the turning wheel. Priced at $3.50 for car set, $4.95 for truck set, they are available at regular retail outlets.

HANDY KEY RING, which works on a trochoid principle, holds up to 20 keys and allows any key to be removed without taking off the others. Ring comes with cloisonne medallion in six different motifs. $2 plus federal tax, from Melbourne Co., 4543 Wyandotte St., Kansas City 12, Mo.

GENUINE WIRE WHEELS, radially laced with 54 spokes and fully chromed, are offered for the Corvair. They employ a twin-eared knock-off nut for mounting to a special serrated bolt-on hub. $495 per set, complete, from Motor Rim and Wheel Service, 2860 E. Pico Blvd., Los Angeles 23.

4-speed special for the do-it-yourself driver

For drivers who think they can outthink an automatic box, Galaxie has a wonderful stick of ammunition—a four-speed floor-shift with sports car ratios and synchro all the way, even on Low.

There's a lot more to this than tenths shaved off the standing quarter; what else gives the do-it-yourself shifter such a precision device for fitting ratios to the torque curve, such a tremendous range of passing gears, such instant engine braking?

This is the magic box that transforms the six-passenger automobile into something mighty close to a sports car... and Ford makes it available as an extra-cost option with the five top V-8's, from the Thunderbird 352 Special right up to the 401-h.p. six-barrel. (Thoughtful item: there's a positive lockout for Reverse gear; you can't get any expensive noises out of this cog unless you mean it!)

If you're a driver who really likes to drive, trot down to your Ford dealer's and get him to unwrap one of these jewels. There just isn't anything that packs so much pure pleasure in a neat grey iron box! A PRODUCT OF Ford MOTOR COMPANY

FORD V-8

390

BUICK

ONE OF THE FIRST 1962 Buick Specials powered by the new V-6 engine to leave the Southern California assembly plant was assigned to MOTOR TREND's testing group. By the time the car was driven from the plant and given a new car delivery checkup, there were only 29 miles on the odometer, so it was up to us to get sufficient time on the engine to provide adequate break-in before performance instrumentation runs on the test course.

The Buick V-6 powerplant is the newest internal combustion engine configuration to be used in Detroit passenger cars. Contrary to many rumors, the V-6 in cast iron was not built to supersede the aluminum V-8 because the aluminum engine was being manufactured at a loss. The decision was one of price, however — selling price. Buick needed a model series slightly lower in price than the V-8, but did not wish to cut overall quality in order to compete with other smaller cars in this class. The aluminum V-8 does cost more to build than the cast-iron V-6, but Buick is not losing money on it.

MT's test Buick Special with V-6 engine was a two-door, four-window, thin-pillar coupe, standard except for optional two-speed automatic transmission, transistor radio and tinted-glass windshield. Heater and defroster are standard in all 1962 Specials. Rear axle ratio provided with the automatic transmission is 3.08 to 1, and 6.50 x 13 tires are standard.

General body lines are little changed from the 1961 models, except for some smoothing and a new die-cast grille introduced on the luxury Skylark sport coupe late in 1961. Many features, both interior and exterior, are attractive and desirable ones that first appeared on the Skylark and have been blended in as standard on the Buick Special.

The engine, of course, is the big news for 1962. Its "V" arrangement of three cylinders in each bank, opposed 90 degrees, is very compact in both height and length. General configuration is similar to the aluminum V-8, except that the Six is one cylinder shorter, but many of the parts are identical to those used on the V-8. With a bore of 3.625 inches and a stroke of 3.2, displacement is 198 cubic inches. A slanted saucer combustion chamber and a compression of 8.8 to 1 make efficient use of regular grades of fuel.

MT began making fuel checks as soon as the car was turned over to us for testing. The first 180 miles of freeway and light city traffic netted 17.4 mpg, but as the engine and running gear smoothed during the break-in period, miles per gallon increased. At 500 miles, under conditions similar to the first mileage tests, we were logging a consistent 20.9 mpg, and this was not feather-foot economy driving, but the "stand on it and go" type of acceleration and cruising necessary to keep up with today's traffic flow.

Rated at 135 hp at 4600 rpm, the V-6 has a torque output of 205 lbs.-ft. at 2400 rpm, which accounts for its ability to perform well with a two-speed transmission and a relatively high rear axle ratio. This low-speed engine torque is undoubtedly the main reason for the good gas mileage, as the engine will lug down to very low speeds and accelerate back up to cruise without down-shifting the automatic transmission. Full throttle from a standing start revs the engine to 4800 rpm (slightly over the horsepower peak rpm) in first gear before the gearbox shifts into high. As can be seen on the acceleration chart, this is just about 68 mph. The car continues to accelerate well after the shift into high and turns the quarter-mile in 21.3 seconds at 71 mph. This instrumentation was recorded with 500

V6 SPECIAL

Two banks of three cylinders, opposed 90 degrees, provide torque and smoothness in a compact powerplant for Buick's Special

LIGHT, POSITIVE STEERING AND A WELL STABILIZED SUSPENSION ALLOW HIGH-SPEED CORNERING ON HARD SURFACES WITH LITTLE LEAN.

Near-equal front-to-rear weight and rear axle control arms give driving wheels good traction, even off the pavement.

Buick Special V-6 *continued*

miles on the odometer, normal street tire pressures, two persons aboard, and no special tuning other than that given on new car delivery service.

What is it really like to drive a V-6? If you can imagine an engine with the torque of a four-banger and the smoothness of a V-8, you can appreciate the V-6 sensation. There is a slight vibration at idle, not the regular pulse of a four-cylinder engine, but rather a slightly irregular one associated with too slow an idle speed. A slight pressure on the foot throttle, that brought idle speed up to 600 rpm rather than the recommended 575, smoothed out the slight low-speed roughness. Engine noise and vibration are very effectively dampened from the interior by isolation mounts and sound-proofing material. Fiberglass shroud around the fan eliminates the drumming noises that often occur in this area when sheet metal is used.

As stated before, the V-6 is a cast-iron engine, but it uses many of the aluminum components of the optional V-8. The entire front accessory drive, an aluminum case that covers the timing chain and includes oil pump and distributor drive, is interchangeable with the V-8. Unnecessary metal in the form of lugs, plugs and covers have been eliminated where possible, to keep weight and maintenance costs down. The crankcase holds only four quarts of oil, and the air filter is washable polyurethane. The oil filter is an exra-cost option on the V-6 engine.

As a result of this simplification and combination of functional components, engine weight has been kept down to where the V-6 weighs about 46 pounds more than the aluminum V-8. Because the engine is shorter by the dimensions of a cylinder and its surrounding block and head material, the front of the V-6 sits well back from the radiator with less weight extending beyond the front axle line so that there is no noticeable effect on front-end handling despite a heavier engine.

Good front-to-rear weight distribution and anti-dive geometry

Adequate braking area and excellent anti-dive front-end design provide short stopping distance with light effort.

of the front suspension give the Buick Special excellent stopping characteristics. While power braking is optionally available on all automatic transmission models, the need for this type of assist is questionable, as the pedal effort is light and the response is positive. Nine-and-one-half-inch cast-iron drums and a combination of molded and extruded lining materials provide an effective lining area of 123.77 square inches. The brakes recover quickly from repeated stops and really stop with a light touch of the pedal.

We spent a lot of time with the 1961 Buick Special V-8 and feel qualified to point out differences in handling between the V-8 and V-6 powerplants. The V-6 Special has very nearly a neutral steering, with the front wheels following well in the direction in which they are turned. At low speeds and for parking, the non-power-assisted steering ratio of five turns lock-to-lock seems rather slow, but at higher cruising speeds this slower ratio is welcome because the car responds to slight steering wheel corrections. Lean under hard cornering conditions is very slight, with a very well stabilized rear suspension system minimizing the roll, yet providing a smooth ride. Rear suspension is adequate for towing light trailers without the need for overload springs.

Wheel position and angle and the relation of rim height to dash cowl are excellent, with no strain to see ahead and no struggle to reach the wheel. Seating is good, but six-footers will find the legroom a little short unless the seat-adjusting tracks are set back a bit. Rear legroom has been increased slightly over last year's Specials by moving the entire seat rearward. Ventilation is better than in most two-doors, for, in addition to the individual side vents near the floor and the hinged vent panes on the doors, the small rear side windows crank completely down into the body.

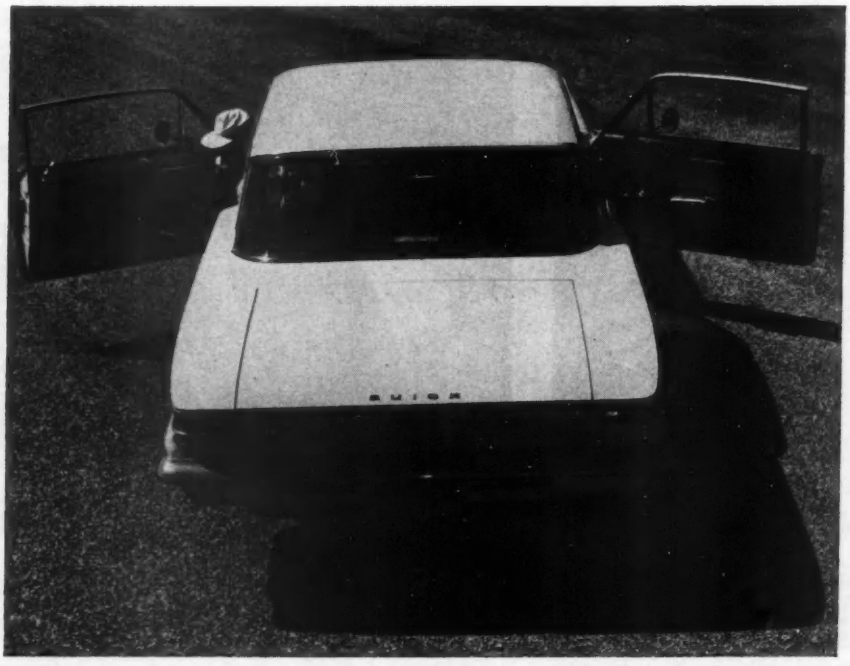
The 1962 Buick Special V-6 is an interesting and highly

SPECIAL WITH V-6 ENGINE INDICATED 100 MPH DURING TEST RUNS ON MILE-LONG STRAIGHT OF RIVERSIDE INTERNATIONAL RACEWAY.

V-6 powerplant with two-barrel carb and thin air filter element has plenty of room for plug changes, servicing.

Deep shroud between radiator and fan is one-piece fiberglass unit void of nuts and bolts, which reduces air noise.

MANEUVERABILITY AND HANDLING OF 112-INCH-WHEELBASE SPECIAL IS LIGHT AND POSITIVE ON IRREGULAR SURFACES OR UNPAVED ROADS.



Rear-end styling changes are toward smoother lines. Wide door openings give entry, exit ease equal to many of the big cars.

Buick Special V-6

continued

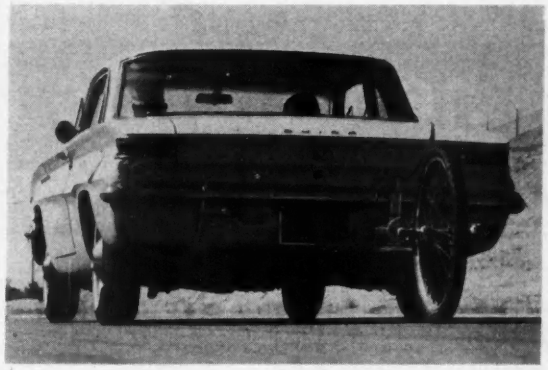
practical addition to the Special series. In standard form, a three-speed column shift is offered, and it is possible that the same four-speed floor stick-shift available for the V-8 will soon be offered for the V-6. The Special is divided into three series. The standard Special is available in four-door sedan, four-door station wagon (two- and three-seat versions), two-door thin-pillar coupe (MT test car), and a two-door convertible. A deluxe Special series offers a four-door sedan, a four-door two-seat station wagon and a two-door convertible. And then there is the pillarless sport coupe, the Skylark, a bucket-seat, super-deluxe car introduced late in 1961.

Buick has made a sincere effort to offer a body style and a price to suit every buyer of smaller, high-quality automobiles. Considerable savings are available, for example, in the convertible, which is available with either a manual or power-operated top. The same is true with engines — the basic V-6 is offered to stretch the price versatility from the 135-hp V-6 to the 155-hp V-8 and the 185-hp V-8.

National interest over the V-6 engine and the excellent performance of this new powerplant are certain to awaken both the Buick factory and independent manufacturers of high-performance accessories to the possibilities of such a potentially potent powerplant. /MT

Luggage compartment houses flat-mounted spare offset to right. Usable space over axle hump increases capacity.

Six-footers will find room for feet and knees in the rear seat and welcome ventilation of fully retractable window.



BUICK SPECIAL V-6

Two-door, four-window, thin-pillar 5-6-passenger coupe

OPTIONS ON CAR TESTED: Transistor radio, automatic transmission, tinted glass
ODOMETER READING AT START OF TEST: 510 miles
RECOMMENDED ENGINE RED LINE: 5000 rpm

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph	5.0 secs.
0-45 mph	8.5
0-60 mph	14.4

Standing start ¼-mile 21.2 secs. and 71 mph

Speeds in gears @ 4800 rpm
Low ..... 67.2 mph Drive ..... 96.0 mph

Speedometer Error on Test Car

Car's speedometer reading	32	47	52	62	72	82
Weston electric speedometer ..	30	45	50	60	70	80

Observed miles per hour per 1000 rpm in top gear ..... 20.0 mph

Stopping Distances — from 30 mph, 34 ft.; from 60 mph, 158 ft.

SPECIFICATIONS FROM MANUFACTURER

Engine
Ohv 6-cylinder in 90-degree V
Bore: 3.625 ins.
Stroke: 3.20 ins.
Displacement: 198 cubic inches
Compression ratio: 8.8:1
Horsepower: 135 @ 4600 rpm
Ignition: 12-volt battery/coil

Gearbox
Two-speed dual-path turbine-drive automatic. Column quadrant selector

Driveshaft
Open two-piece, with U-joints at transmission and differential, double Cardon cross joint supported at center

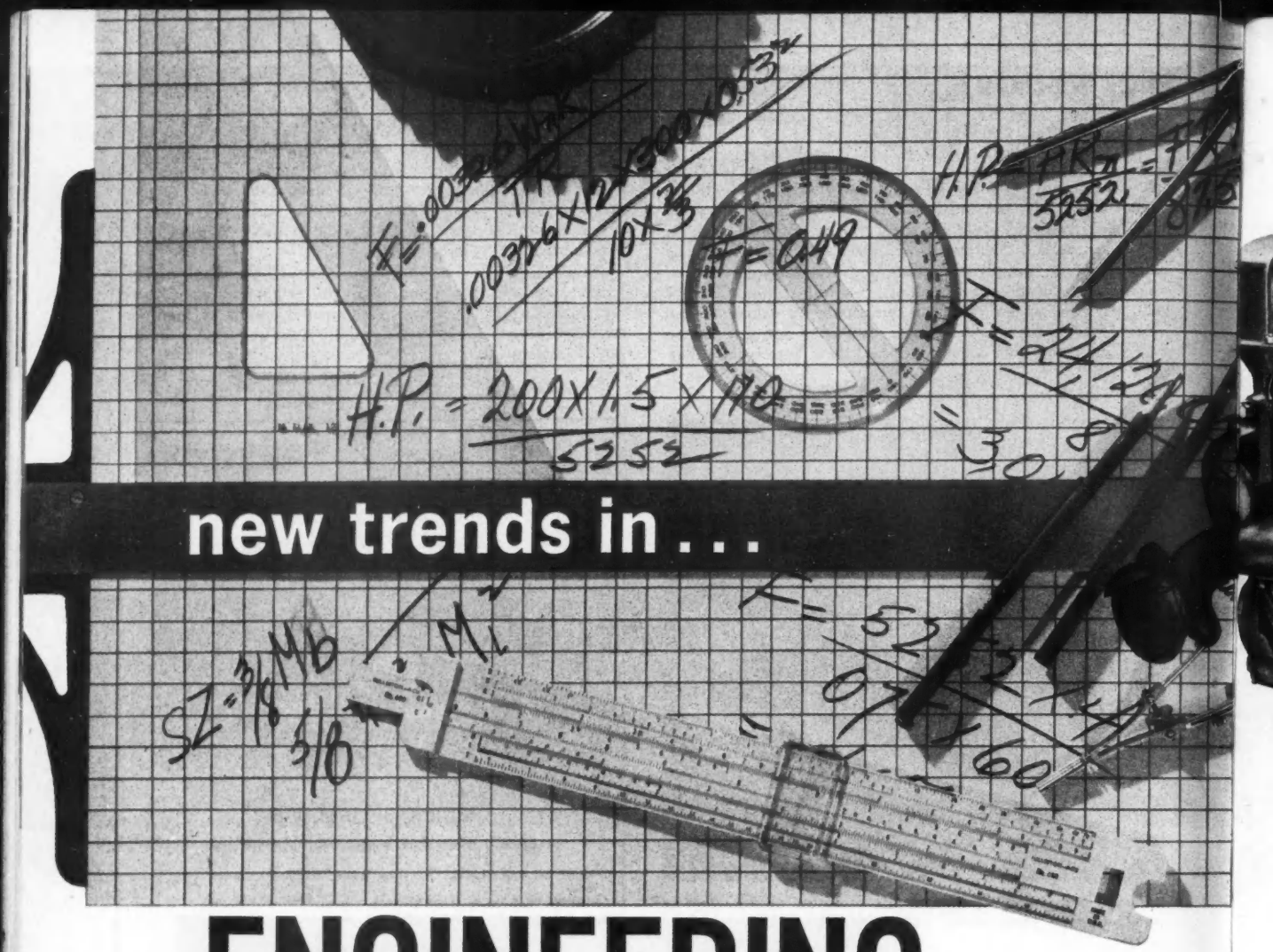
Differential
Semi-floating hypoid
Standard ratio 3.08:1

Suspension
Front: Independent, coil springs with ball joints, tubular shocks, link-type stabilizer bar
Rear: Solid axle, coil springs, control arm stabilization, tubular shocks

Wheels and tires
Steel disc, 5-stud 13-inch wheel
6.50 x 13 Tyrex tires

Brakes
Hydraulic drum 9.5-in. dia.
123.77 sq. in. effective lining area

Body and Frame
Integral body/frame
Wheelbase 112 ins.
Track, front 56 ins., rear 56 ins.
Overall length 188.4 ins.
Dry weight 2638 lbs.



ENGINEERING THE '62s

by Roger Huntington

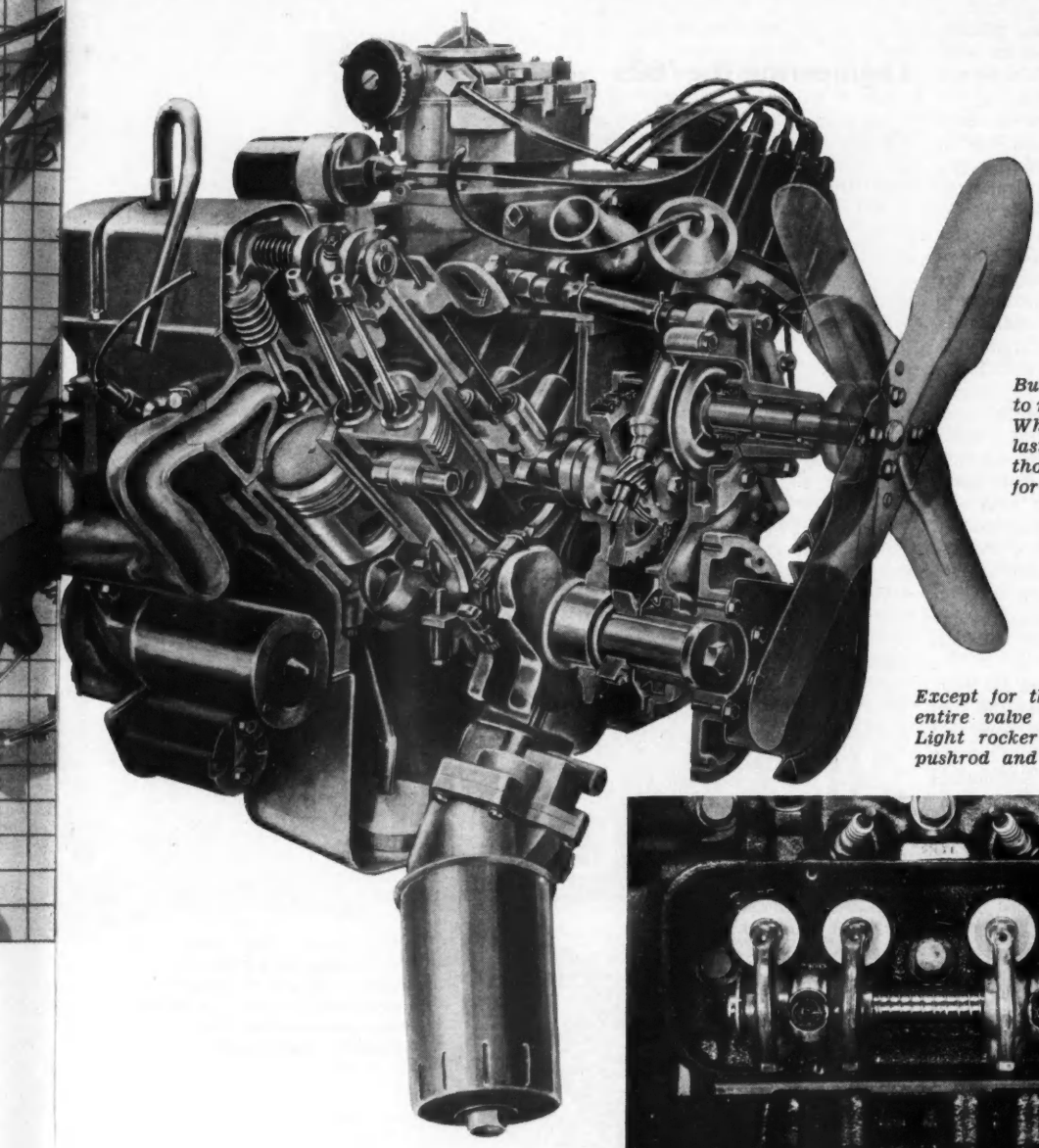
AMERICAN PASSENGER CARS have long had the reputation around the world of selling primarily on the appeal of radical body lines, gawdy chrome trim, luxury features, gimmick accessories. Engineering features were hardly considered as selling points.

This may have been true five years ago — but it just isn't any more. In fact, the new crop of 1962 models shows more engineering development than styling development. Today's car buyer is sharper about these things than he was a few years ago. The manufacturer has to offer more than gimmicks to sell him. In today's highly competitive, multi-model American automobile market the companies have to fight for your "disposable dollar" with every weapon in the book — *engineering included.*

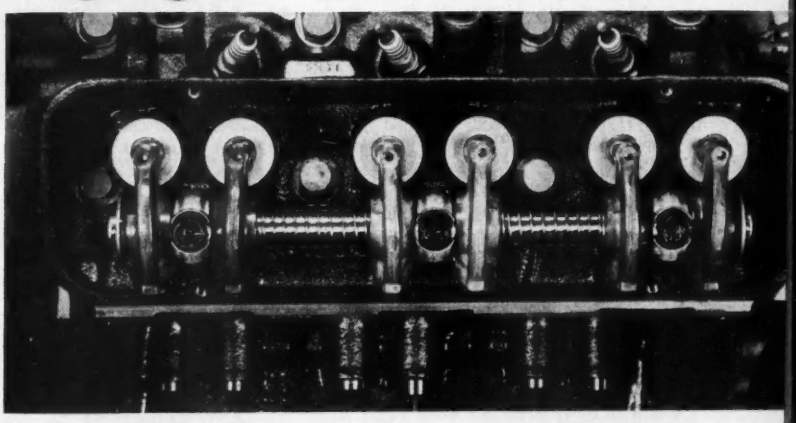
Here are some of the interesting developments this year . . .

ENGINES

The big engine story this year is the swing away from aluminum construction and back to cast iron. A year or so ago — with the new aluminum Corvair engine, the Buick-Olds small V-8, plus new die-cast aluminum blocks from Chrysler and American Motors and several well-advanced aluminum engine programs in the industry — it looked as if there just wouldn't be any more new American engines tooled for cast iron. Aluminum looked cheaper to cast and machine, and



Buick's new V-6 was a shocker to many in the industry. When tooling was started only last April, many observers thought the engine was slated for introduction in 1963.



Except for the shaft, the new V-6 uses entire valve gear from aluminum V-8. Light rocker arms use steel inserts at pushrod and valve stem contact points.

the swift trend to smaller and lighter cars made the light weight factor doubly important.

You know what happened. Aluminum *didn't* prove to be cheaper to cast and machine. Unexpected bugs developed that haven't been solved. Undoubtedly aluminum is still the "material of tomorrow" in our auto industry, but right now dollars-and-cents economics have forced some quick decisions on new engines for the '62s — and cast iron got the nod in all cases. I refer to the new small Fairlane V-8, the Buick V-6 for the Special series, and Chevrolet's new in-line four- and six-cylinder engines for the Chevy II series. All cast iron.

But there's a gimmick: Newly developed foundry techniques are permitting us to cast substantially thinner walls and sections in the cylinder blocks and heads for these new engines. This is giving us engines that are at least ten or 15 per cent lighter per cubic inch of size than older engines using conventional casting methods. The new "thinwall" iron engines still aren't approaching the weight of comparable aluminum engines — but we're getting closer, and the potential of the new techniques has barely been scratched yet. The new tricks would include using pre-heated core boxes for quick core curing with plastic sand binder; dipping cores in chromate solution to smooth them; hydraulic ramming of the sand in the mold; using single-piece cores instead of multiple sections; using new iron alloys for casting that give more strength, ductility (not so brittle) and flow into the mold better. Not all the new engines use all these techniques yet, but industry production men generally agree that the art of iron casting will be revolutionized in the next three years.

Just what this will do to the future of the aluminum engine remains to be seen.

Buick's new V-6 engine for the Special series came as a shock to the industry. They say the tooling program was started only last April, and all the "observers" thought it was to be a 1963 engine. Such quick tooling is unheard of in Detroit. If a considerable amount of the V-8 tooling hadn't been utilized, such speed wouldn't have been possible. For instance, by using a

90-degree V angle and the same cylinder bore center-to-center distance as the V-8, Buick is able to machine the V-6 on the V-8 lines.

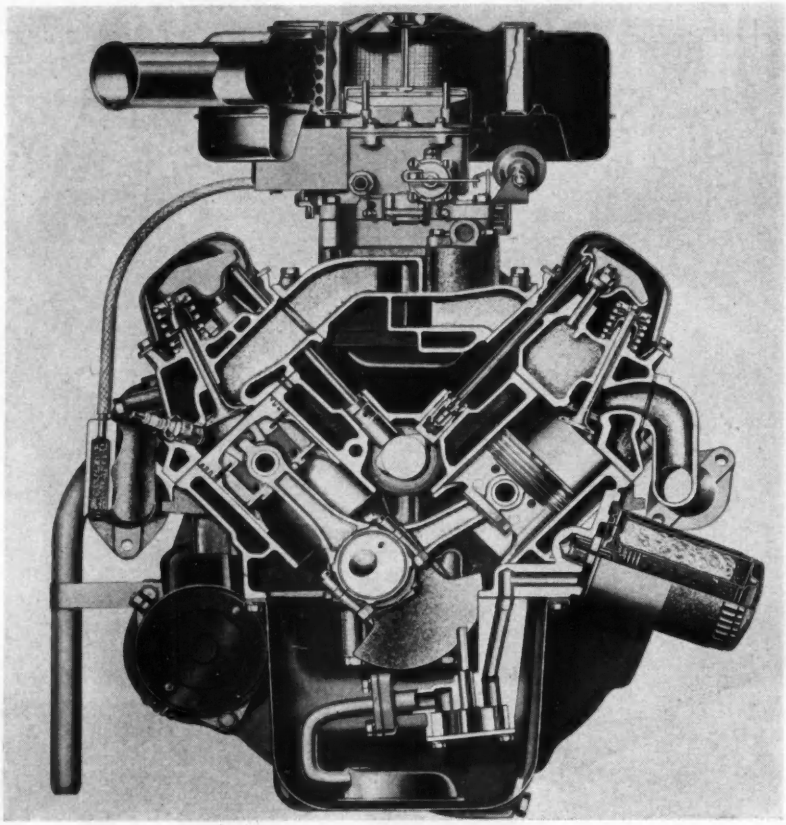
Of course, the textbook says you can't use a 90-degree V angle with a V-6. In order to get even firing impulses you would have to use either 120 degrees or 60 degrees between banks. With 90 degrees some cylinders fire at 90-degree intervals of crank rotation, and some at 150-degree intervals! If the engine were run at very low rpm there would be a noticeable unevenness in the exhaust beat.

But Buick engineers weren't frightened. They say there's no noticeable effect in the operating speed range. As for balance (always a bug with the V-6 layout), computer calculations showed that there would be a horizontal or cross-wise shaking force at a frequency of twice crankshaft speed, that couldn't be balanced out with conventional counterweights. In magnitude it would be similar to that of a Porsche flat-four-cylinder engine — and a good deal less than the up-and-down shake of a Tempest Four. Buick engineers figured they could muffle it pretty well with soft motor mounts.

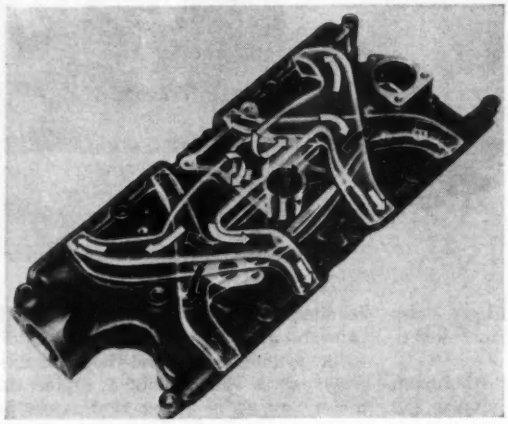
The new Buick V-6 contains one more very significant feature: Connecting rods are *cast* instead of forged. The same GM "Armasteel" iron alloy as is used for the cast crankshafts in some other GM engines is used. It's much stronger and more ductile than conventional gray iron. This is one of the new alloys that will play a big part in the coming era of the thinwall engine. The cast con rod is the coming thing. It's cheaper to cast than to forge almost any time.

One interesting trend this year is the wider use of interchangeable parts on engines within a given corporation. With the many new engines of all sizes coming out of Detroit these days, this approach is just about a necessity from the dollars-and-cents standpoint. Note that the new Chevy II four- and six-cylinder engines use valves, springs, pistons, rods, bearings, etc. from the small Chevrolet V-8. The Buick V-6 uses valve gear and some other parts from the Buick Special V-8. Part interchangeability is a powerful cost-saving weapon around Detroit — always has been — and I look for more and more of it in the future.

Some other significant new engine developments this year: The mechanical zero-clearance valve lash setup on the Ford Six using solid lifters — the industry has long tried to get away from valve clatter without the cost of hydraulic lifters. Chrysler products are using a flexible-cable throttle linkage, which should solve some problems. Ford is using a unique water-warmed aluminum spacer between the intake manifold and carburetor on most of its '62 lines. This will maintain more even carb temperatures under all operating conditions, and get away from fuel boiling, cooking of oil on the under side of the exhaust-heated area of the manifold, etc. All this is progressive engineering that can't be ignored.



Cutaway of Ford's new 221-cubic-inch Fairlane engine shows "thinwall" construction made possible by recently developed foundry techniques.

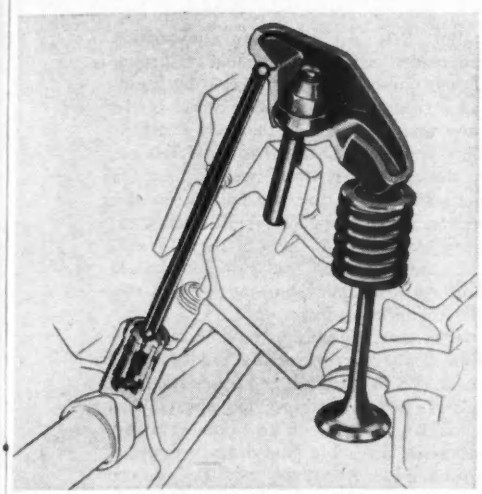


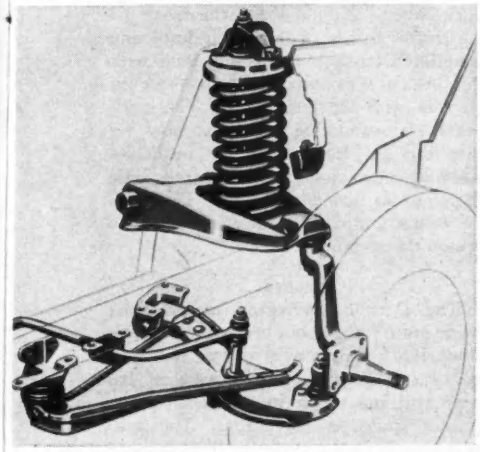
Arrows show balanced fuel flow through Mercury Meteor intake manifold. Mixture is heated by water passage below carburetor.

TRANSMISSIONS

There's more talk about new four-speed floor-shift transmission options around Detroit these days than about bread-and-butter developments on the automatics. This is just another sign of the increasing efforts to work optional sports-car characteristics into our standard production-line cars. There is certainly a rapidly growing market for the high-performance "personal" car that is fun to drive, but at the same time has plenty of passenger and trunk space and is reasonably economical to buy and operate.

The four-speed transmission option is an important part of the package. New arrivals on the scene this year are Ford, Buick Special, Pontiac Tempest, and the Lark Daytona. The Olds F-85 Cutlass will





TOP: Both Fairlane and Meteor V-8's use stud-mounted, ball-joint-type rocker arms molded of iron alloy. BELOW: Seating coils higher in fender wells distribute suspension loads over as wide an area as possible.

undoubtedly follow soon. All these cars except the Tempest use the basic Borg-Warner four-speed, first developed for the 1957 Corvette. There is not yet enough of a market here to warrant tooling up for entirely new transmissions, so the B-W heavy-duty three-speed was modified with reverse gear in the tail housing. It's one of the finest transmissions in the world today. Tempest uses a modification of the Corvair four-speed, which fits right into its advanced transaxle rear end layout.

All the attention on the four-speed almost hid a new automatic transmission over at Chrysler. Their '56-'61 three-speed Torqueflite has been one of the best-performing automatics in the industry. But it was bulky and heavy and expensive to produce. Two years ago they brought out a new lightweight three-speed for the Valiant and the low-torque six-cylinder Plymouths and Dodges. This did a beautiful job, but it wasn't beefy enough to handle the big V-8 engines . . . so now they have scaled this one up for the big cars, using the same gear ratios and performance characteristics of the Torqueflite, but in a simpler package. The new design weighs 60 pounds less, gives a much lower floor hump — and it's a good deal cheaper to make. Chrysler is definitely up to date on automatic transmission design for at least a few years.

Chevrolet has followed a Buick lead and dropped the complex multi-turbine Turboglide transmission this year. At one time, a few years back, it looked as if the trend would be toward these more complex designs that tended to maintain a constant engine rpm as the car accelerated. (This is theoretically the ideal condition for a piston engine that develops its maximum power and torque over a narrow speed range.) But the things just cost too much to build and wasted too much gas in normal city driving due to slippage. The people didn't buy them. So now we seem to be trending back, actually, to simpler and theoretically *less* efficient designs. That's the way engineering works sometimes. Chevy has, however, put a new aluminum case around the old Powerglide!

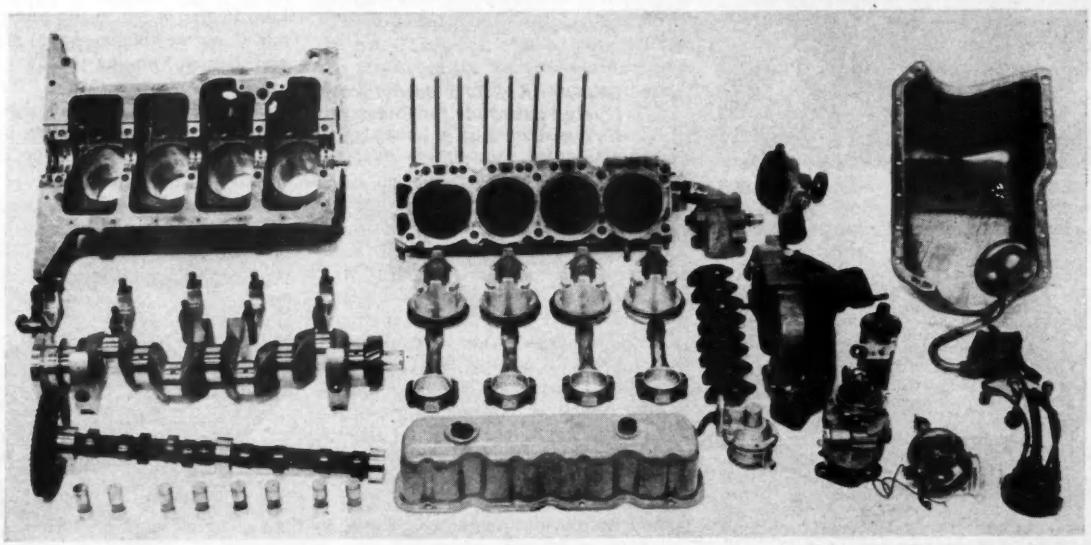
SUSPENSION

The most important suspension development of the year, of course, would be the single-leaf rear springs on the Chevy II. Engineers have wanted to use single-leaf springs for many years — as they're potentially cheaper, lighter, and the absence of rubbing friction between the leaves of a conventional multi-leaf spring gives a better ride, especially over relatively smooth boulevards where there is little suspension movement. The thing that stopped them was production. Rolling a flat piece of steel with varying thickness presents a tough problem. Chevrolet engineers solved it by letting the piece spread out sideways where it was squeezed down thinner. They also came up with a new process for shot-peening the top side of the spring leaf while it is under compression force, so the life is extended about ten times. There is practically no chance of breakage.

Right now it looks as if Chevrolet has the only practical way of manufacturing single-leaf car springs for the mass market . . . and the Chevrolet processes are pretty well sewed up with patents. The word around the industry is that several other makers are very interested in the single-leafers — but they haven't yet been able to get around the Chevy patents. It will be interesting to see how this one evolves.

It's interesting to see the front coil

Four-cylinder powerplant for the Chevy II uses simple but rugged components of proven design. Husky five-main-bearing crankshaft should be a bear for wear.



springs on the new Chevy II and Fairlane mounted above the suspension arms, so they seat high up in the fender wells. Rambler and some European firms have been doing it this way for years. With unit body construction it is important to spread suspension loads over as wide an area of the structure as possible. Putting the coil springs between the two front suspension arms concentrates the loads over a small area around the arms.

Other new suspension developments: You see still more and more rubber cushioning in suspension joints to isolate road vibration. I've always said that some day American suspensions would depend as much on rubber as on steel springs for their cushioning. It's a definite trend. Lincoln has increased its shock absorber piston diameter from 1 3/16 to 1 3/8 inches. Larger pistons reduce working pressures, cut heat build-up, give smoother action — and cost more. Lincoln also uses its shocks for rebound cut-off, by closing off the orifices and letting the hydraulic pressure build up at the cut-off point (where the rubber suspension bumper would normally take over). This gives a smoother, less harsh cut-off. Buick gets something of this effect on the Special by using variable-pitch rear coil springs that stiffen up near the stops. It's all part of a trend.

STRUCTURE

Unit-body construction continues to make progress, with the new Chevy II and Fairlane using it; but Detroit hasn't switched over wholesale, as some predicted. There's too much tooling investment for the big cars that have been using separate frames for years. Besides, there is much evidence that unit construction has little to offer in weight and cost savings for cars with long wheelbases and low height, since the torsional and beam strength of any box structure decreases greatly as you make it longer and lower (less like a cube). Unit construction seems most practical for small cars under 3000 pounds.

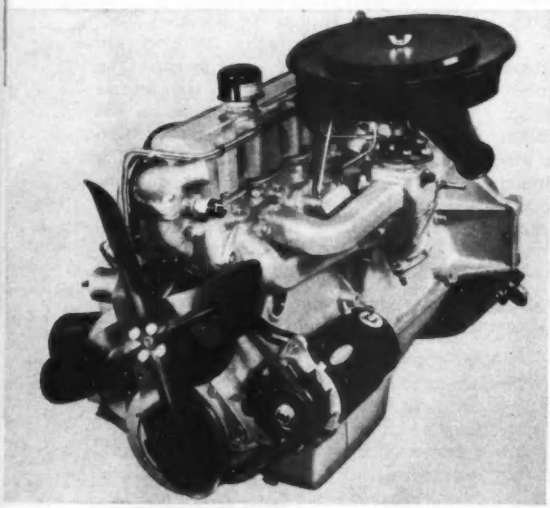
But there are interesting construction differences within the field. Chrysler started out its unit construction by building a separate superstructure ahead of the cowl, and *bolting* it on the body structure. This year they've started to *weld* this on, so the whole deal is one welded unit. On the other hand, they are bolting on this section on the new Chevy II. Each company has its own concept of the most efficient way to utilize the full potential of unit construction... but my idea is that we have a lot to learn yet.

One more significant trend in body design is the ever-increasing use of sound insulation in both unit and frame-mounted bodies. Body drumming has always been a tough problem with unit bodies, as they act a lot like a big bass drum to amplify road rumble. About the only way you can fight it is to mount the suspension in thick rubber, and then pad the inside of the body panels with sound-deadening material. Detroit is going hog wild with this. And it's working beautifully — even on cars with separate frames. The engineers are wondering now just how far they can go. Every piece of insulation padding seems to quiet the car a little more. Looks now like the only limit will be weight and cost of the stuff! Keep an eye on this trend.

BRAKES

The Detroit advertising men haven't made much noise about brake development since Buick's aluminum drums in 1958. But I can assure you that progress has been real and steady in the meantime — if not quite as spectacular. The self-adjusting brake is sweeping the industry. This year all the Chrysler cars and Oldsmobile have the feature. It costs only a few cents per car. They'll all have it soon. Lincoln has quietly switched to aluminum front drums on some of its '62 models, using the Al Fin aluminum-to-iron bonding process for the liners (like Buick uses). Lincoln has had a lot of lining area per ton of car weight for several years — and now they're bringing out an even better brake.

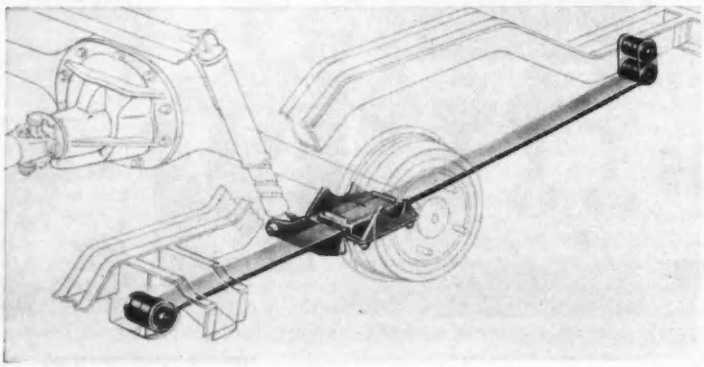
An interesting new Cadillac development is dual master cylinders, one for the front brakes and one for the rears. Thus

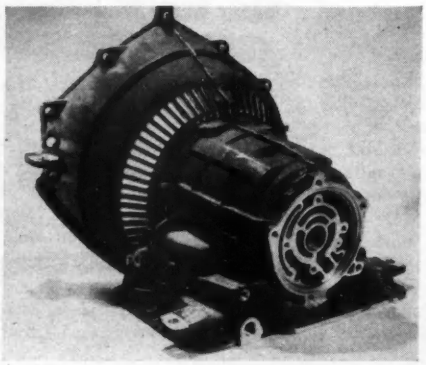


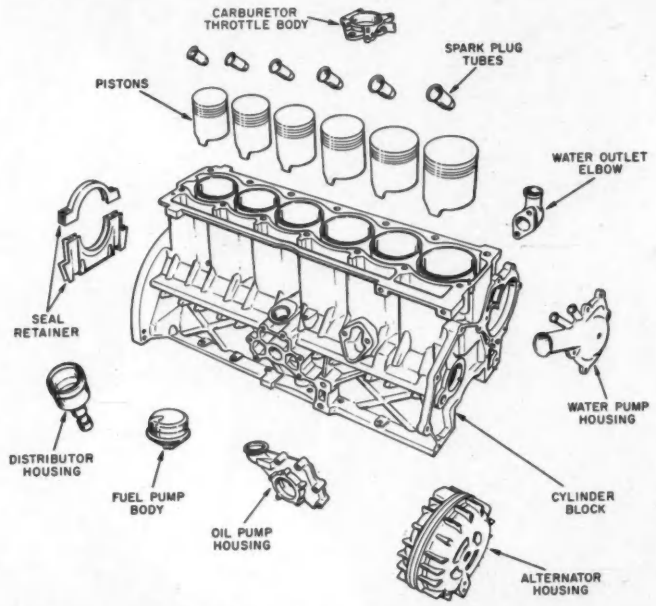
Six-cylinder, 194-cubic-inch engine for Chevy II is rated at 120 hp. Many components of in-line Four and Six engines are interchangeable with small V-8.

BELOW: Chevy engineers came up with the answer to manufacturing bugs that have held up the use of single-leaf springs.

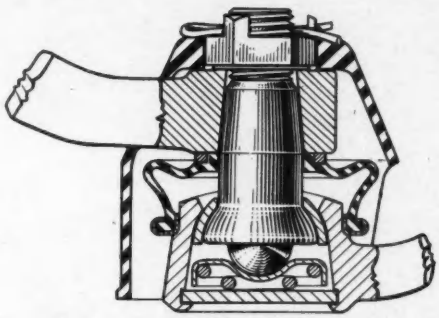
BELOW RIGHT: Back to old, trusty Powerglide for Chevrolet. New version has a lightweight, air-cooled, aluminum housing.



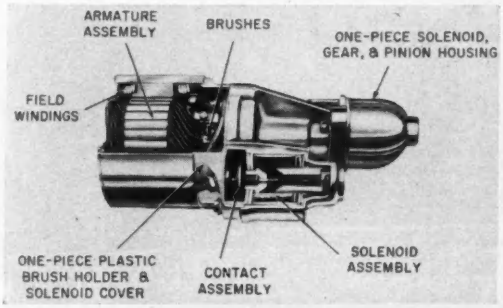




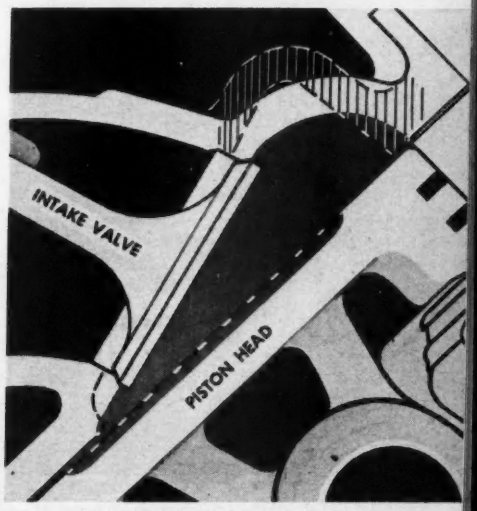
CHRYSLER PRODUCTS' SLANT-SIX USES MANY ALUMINUM COMPONENTS.



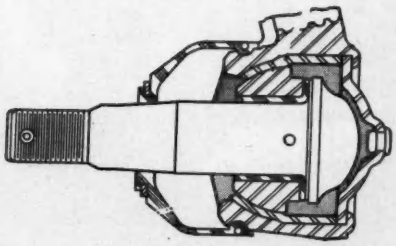
Tie-rod end used on Chrysler products is sealed at the factory and requires no lubrication. Service life of units is rated at 32,000 miles.



Built-in reduction gear gives more starting torque to starter motor on Chrysler products.



Oldsmobile Rocket, Skyrocket & Starfire engines have reshaped combustion chamber. Broken line shows 1961 shape.



Periodic lubrication on all full-size Oldsmobiles is eliminated through the use of factory-sealed chassis fittings.

if one brake line should rupture, you would still have braking on the other end of the car. It's a safety feature that costs money, but many times we've seen things like this show up first on luxury cars — and later adopted on the bread-and-butter lines. American Motors has switched to dual-cylinder two-leading-shoe brakes on front *and rear* of the Ramblers. This gives a self-energizing action to both shoes, and requires less pedal pressure for a given braking force. Chrysler has been using the setup on its front brakes for years, but using the dual cylinders front and rear is new.

OTHER DEVELOPMENTS

The engineers at Ford Motor Company are dead serious about building cars that will need no maintenance other than addition of gas and crankcase oil changes for three years or 30,000 miles. Their factory-sealed cooling systems with permanent anti-freeze, aluminized mufflers, water-warmed carburetor "heat sink," etc. are the latest developments. They had a "lifetime" chassis last year — which, incidentally, is now offered by Chrysler products, Olds and Pontiac. The trend is building fast. Two years ago the 30,000-mile car looked like a dream. Today it's just a matter of time.

There's a lot of clever engineering on small, insignificant items: Chrysler has put a reduction gear in their starter motor unit so they can wind it faster and get more starting torque out of a given size and weight. For their new heaters they are using a unique axial-flow blower (works like an airplane propeller) that goes right in the main fresh-air duct from the cowl vent; air circulation per watt of electric power is maximum, so Chrysler's continuously operating blower (no ram air feed) is more practical. Ford has changed its heater system so the heater core is kept at a constant temperature, and the car temperature is adjusted by varying the amount of air passing through the core. They feel this is more efficient and less expensive than the old way, with water valves controlling the flow through the core.

Ford is using laminated head pipe on its exhaust systems to reduce boom (the two layers of pipe have a certain amount of rubbing friction when they vibrate that damps out boom). On the Comet they mount the rear of the transmission to the body structure under-frame through a simple *leaf spring* — this should give just about the ultimate in isolating drive line vibration from the passengers! Chrysler is using a new filament cap on its sealbeam headlights that blocks the stray downward rays as well as the up rays, so there is less reflection from bumpers and front chrome that would show up as objectionable glare on the highway.

I could go on and on. There was a lot of very sharp engineering out of Detroit this year. Consider this aspect when you go to buy a new car. /MT

NEW LOOK FOR

THE T-BIRD

FOR YEARS a small but vocal group of auto enthusiasts has been calling for the return of the two-seat Thunderbird. The fact that their desire could never be answered seemed all the more certain each year as the bigger version of Ford's personal luxury car grew in popularity. But, in spite of Dearborn's commitment to a big 'Bird, a happy compromise is offered in 1962 — a new sports roadster with a unique two-seat modification.

Basically the same body shell as the standard four-seat Thunderbird convertible, the roadster is equipped with a fiberglass tonneau that covers the rear passenger seats. More than just a panel, the tonneau serves double duty by putting big, well-padded head rests above the seats of both passengers.

The illustrations on these pages show the relatively simple process of mounting and removing the cover, but according to Ford engineers, this can only be done on the roadster body. The tonneau is not adaptable to the standard Thunderbird convertible nor is the unit sold as an option.

The sports roadster is a third and separate body style which, besides the cover, includes special insignias, a passenger assist bar and chromed wire wheels. To show off these bright wheels a little more, the roadster does not have the normal rear fender skirts.

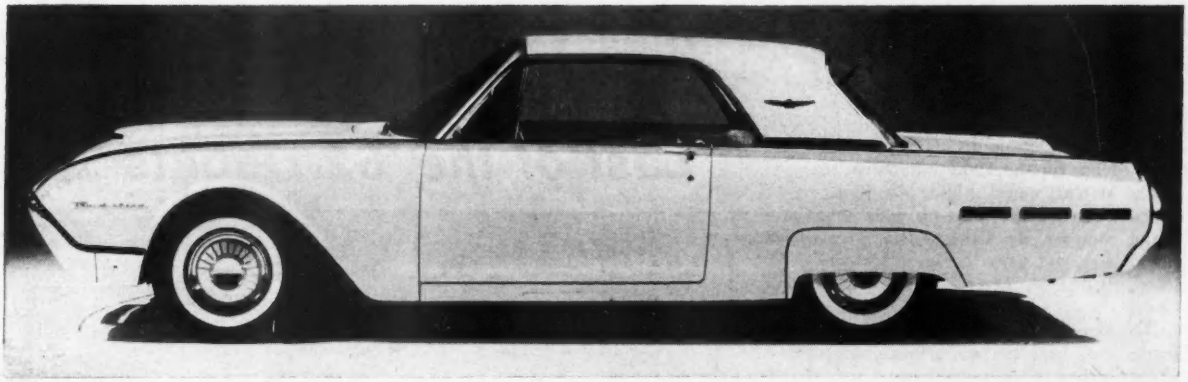
Further emphasis to the fact that Ford is starting a trend to more distinctive body styles is at hand in the fact that there will be a fourth body style for the T-Bird in '62. The landau coupe is another variation on the basic car — this time the hardtop. The roof is covered with a simulated leather fabric and the trim includes a novel return to the classic styling flourish, the landau iron. These S-shaped bars signified super-luxury carriages in days that preceded even the horseless carriage.

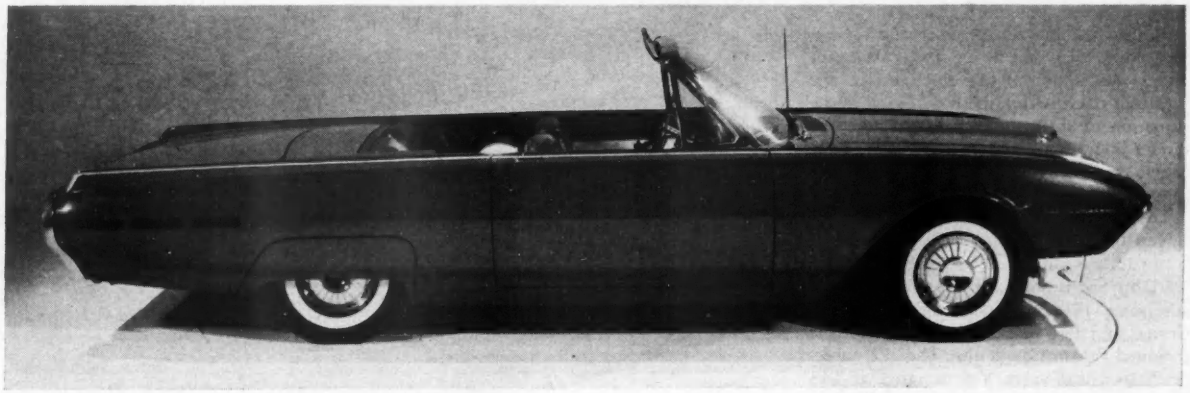
As outlined in last month's announcement issue of MT, there are few mechanical changes under the skin of the Thunderbird, but there is one new engine option that will be available for the sports roadster. To beef up the standard 390-cubic-inch V-8, the buyer may add a carburetion system with three two-barrel units. This raises the horsepower output from 300 to approximately 340. (This is the same carburetion setup that is available for the high-performance Galaxie to up its rating to 401 mp.)

Here's Ford's answer to the cries for a return to the two-seat T-Bird. Sports Roadster is a variation on standard four-seat convertible.

Sports Roadster also has convertible top. With it down, there's room for little else in trunk besides the spare tire.

New look for the T-BIRD *continued*

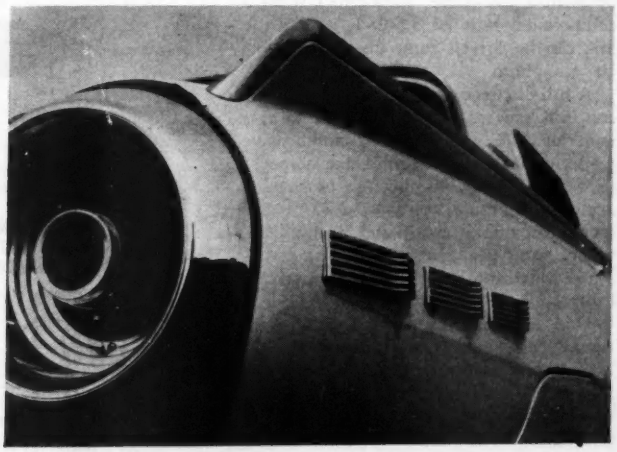


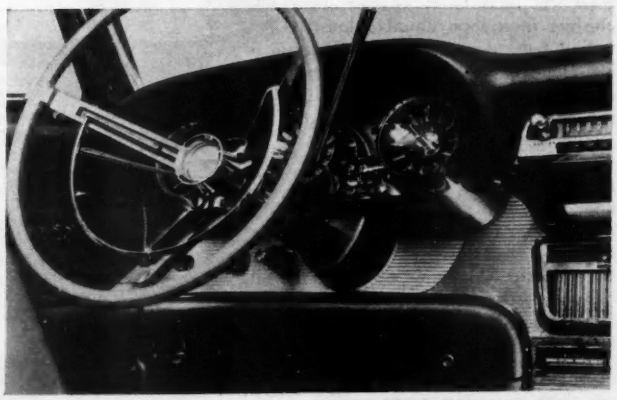


ABOVE: The two standard body styles which remain as the foundation of the T-Bird lineup are the popular four-seat hardtop and convertible.

RIGHT: One of the main styling differences in '62 is addition of three-piece trim ornamentation on rear fender panel.

LEFT: New Landau Coupe is the fourth body style in the current 'Bird offerings. Roof is covered with a simulated leather, S-shaped landau bars sit on side.





RIGHT: Still an important interior option on the Thunderbird is the swinging steering wheel that can be moved aside when the transmission control is moved to Park position.

Last of the '62 Debuts

MERCURY'S METEOR

LAST of the Detroit debutantes to make its debut for the 1962 automotive season is Mercury's new middle-size Meteor. Sharing much of its make-up with Ford's senior compact, the Fairlane, the Meteor sits in size and price between Mercury's standard-sized Monterey and the compact Comet.

The Meteor's all-new unit body is 203.8 inches long and sits on a wheelbase of 116.5 inches. This same basic shell as employed for the Ford Fairlane carries 13-inch wheels, but the Mercury version boasts 14-inch wheels as standard equipment. An important development in the unitized construction method results in the isolation of the front floor area from the under-body structural members and cuts down on the transfer of vibration to driver and passengers.

A choice of two powerplants will be given the Meteor buyer: the Ford in-line compact Six and a new, small V-8. The 101-hp Six is standard equipment and is the same 170-cubic-inch engine that was introduced last year as a variation on the original Falcon-Comet unit. The 221-cubic-inch overhead-valve V-8 is rated at 143 hp with a two-barrel carburetor. With a compression ratio of 8.5-to-1, it, like the Six, can be driven right up to the regular gas pump.

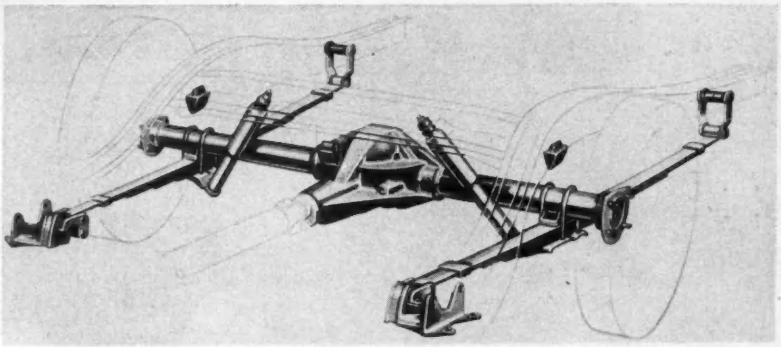
A full discussion of this Fairlane-Meteor cast-iron powerplant is presented in this issue of MT within the comprehensive report on 1962 engineering, but some of its outstanding points that can be stressed again are: lightness (only some 75 pounds more than the Six), cast-iron rocker arms, a new water heat spacer below the carburetor which provides better temperature control for the fuel-air mixture.

Due, at least in part, to the high initial costs of unit construction, the Meteor will be available at introduction in only two body styles, two- and four-door sedans. Both of these models will be offered in the standard Meteor series and in the deluxe Meteor Custom series. The latter has additional chrome trim and plushier interior accommodations.

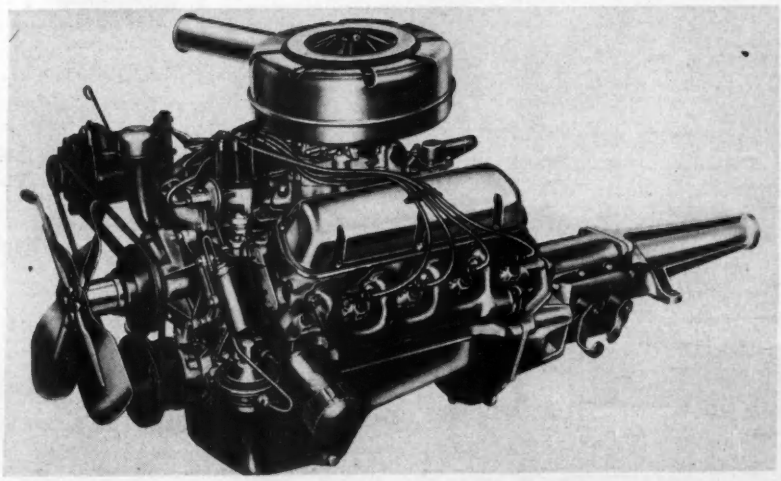
Following the current Ford program of low-maintenance features, the Meteor has a lubrication system, engine cooling system and fuel filter which are all good for 30,000 miles or two years.

There are a number of other interesting features in the Meteor. New double-toggle door latches are self-centering. The instrument cluster has ammeter and oil pressure gauges, an exclusive within the whole Ford Motor Company lineup. The suspension system boasts Mercury's "cushion-link," an addition to the springing of all four wheels which allows them to move rearward as well as upward upon impact. /MT

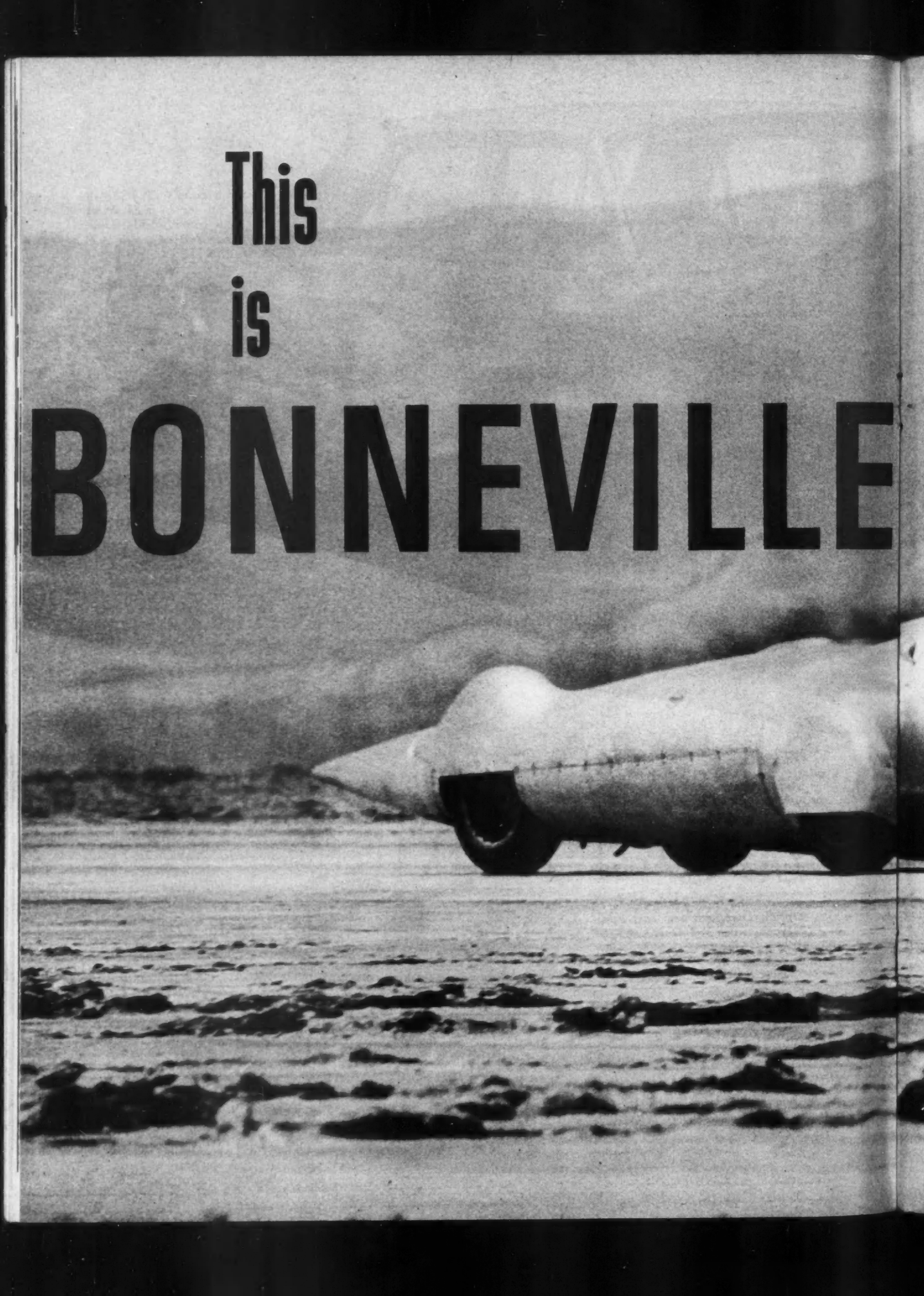
The Meteor's greatest styling distinction is at the rear. Car is offered as two- or four-door sedan only. Special "Custom" series has deluxe trim and ornamentation.



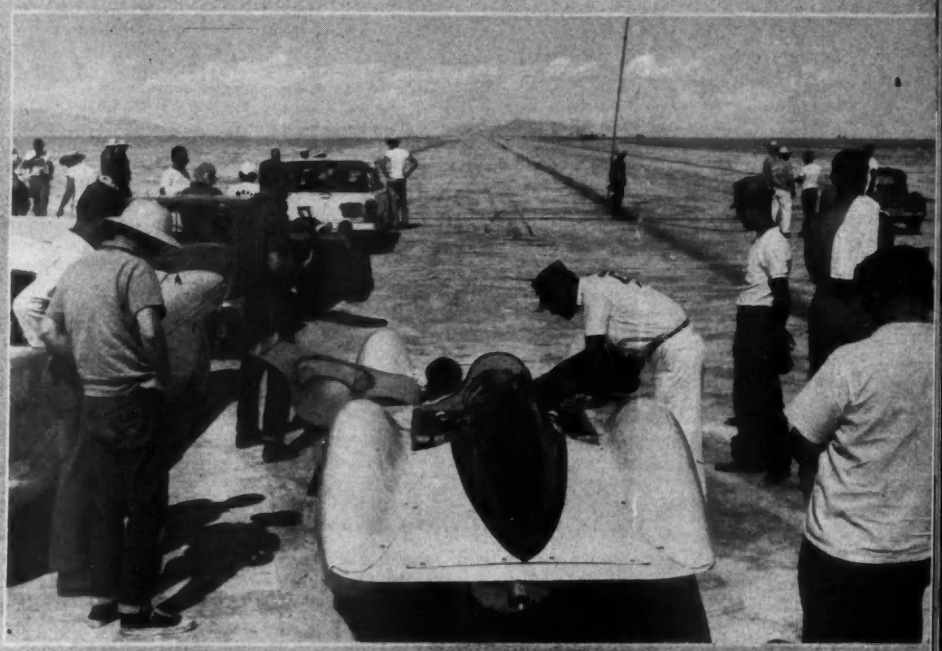
Conventional rear suspension has addition of Mercury's "cushion link" system (lever on front shackle of springs) which allows wheels to move backward as well as upward.

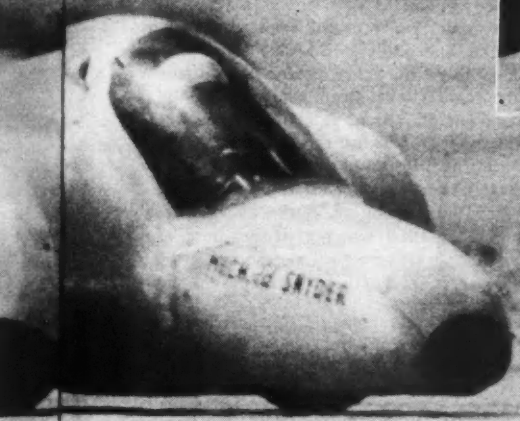


Optional engine is new, cast-iron 221-cubic-inch V-8. Only some 75 pounds heavier than the standard Six, it adds 42 hp. This engine is shared with the Ford Fairlane


This
is
BONNEVILLE

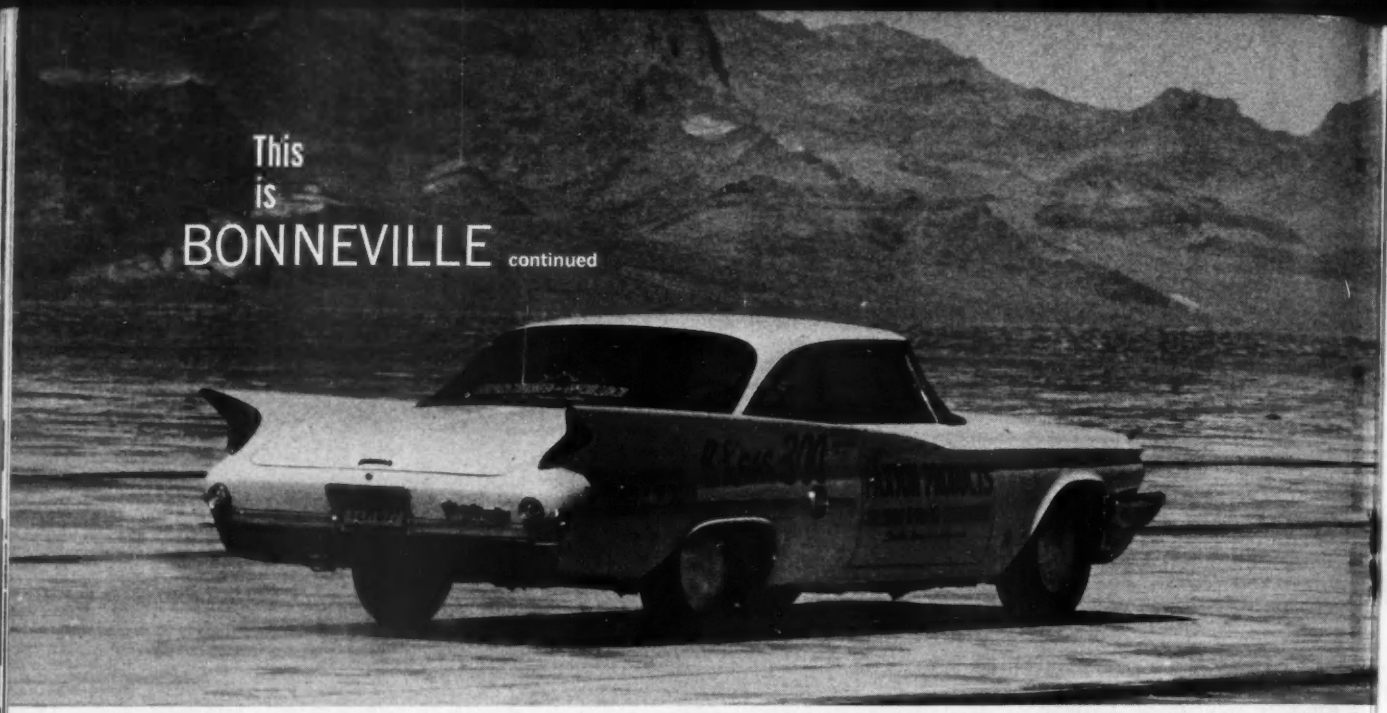
Eerie and moon-like, the quiet calm of western Utah's salt flats is shattered by annual invasion of roaring monsters searching for speed.





The world's fastest racing course...

This is BONNEVILLE continued



ANDY GRANATELLI IN HIS BIG CHRYSLER 300-G WITH TWIN PAXTON BLOWERS SET A NEW B SUPERCHARGED CLASS RECORD OF 184.049 MPH.

BONNEVILLE ... a name synonymous with automobile land speed records ... is a vast stretch of salt lake bed near Wendover, Utah. For the 13th time in as many years, the Bonneville National Speed Trials were run, despite early reports of very poor course conditions due to lack of spring rain and the draining of sub-surface water by a nearby potash mining operation. However, thanks to hard work by the Bonneville committee and the county road department, 9.5 miles of good racing surface were available by the end of August. Dr. Nathan Ostich and his jet-powered car, and Mickey Thompson's four-engined Challenger, had cancelled their attempts because of reported rough salt conditions and the rather short length of the course for their 400-mph-plus automobiles.

Rough salt or not, two entries, Art Arfons in his Allison-engined monster (see pages 40 and 41) and the Summers brothers with their new tandem-wheeled, front-wheel-drive, supercharged Chrysler-powered streamliner (see pages 44 and 45), ran over 300 mph. Early in the week, Arfons' supply of aviation fuel had not arrived, so he immobilized his supercharger and ran 271.49 mph on regular pump gasoline. Later in the week, with the proper fuel and an extra ¾-mile to get started, he was timed at 313 mph. The Summers brothers, with an untried car that featured front-wheel drive and the rear wheels one behind the other in tandem, blew their best engine after a qualifying run of 302.317 mph, but managed to set a new C Streamliner record of 262.231 mph average for a two-way run with their spare engine rushed up from Los Angeles.

Knowing they could get more from their spare engine with a little tuning, the Summers brothers did not submit to tear-down after the record, intending to re-qualify late Friday and run for a new record on the last morning of the meet. Fate again stepped in with rain and high winds that prevented further qualifying runs, as the course was shut down about 3:00 P.M., leaving nearly 30 cars waiting to run. So, while the Summers runs were official, they do not have an official record.

Bill Burke's streamliner, current D class record-holder, came to assault both the D and E streamliner classes with two Mickey Thompson-prepared, four-cylinder, supercharged Pontiac engines. Burke thrilled himself and the spectators with a spectacular spin when a tire blew at 183 mph. At the same instant the radiator cap popped off, filling the cockpit with steam and fogging the transparent bubble, cutting out all vision. A split second later the fuel mixture leaned enough to backfire through the blower pop-off valve and a piston burned, so Burke towed back to Wendover to repair the damage. After working all night installing the 180-cubic-inch Pontiac Tempest engine, Burke qualified at 213 mph, but a new record for 1961 was not in the cards, as the engine blew at 244 mph on his first record run north, filling the driver's compartment with steam and hot oil as Burke again saved his spinning car.

American and European stock cars tried for new speed records in their various classes. Andy Granatelli drove his twin-Paxton-blown Chrysler 300-G to a two-way average of 184.049 mph, and Norm Thatcher's blown Dodge qualified at 184 but failed to complete any of his two-way runs. A blown VW, driven to the course from Concord, California by owner-driver Dick Beith, set a new E Touring Sports record of 101.696 mph, and Harry Umemoto drove his Porsche Super 90 to a 119.326 mph average. J. A. Stallings of Phoenix broke his old D Sports racing record with a clean 144.839 mph in a Mercedes 300-SL, and Mark Dees and Racer Brown set a new B Sports racing record of 189.390 mph in Dean Moon's Moonbeam, powered by a blown Chevy engine.

There were some exciting specials too, highlighted by Knot Farrington's so-called T-Bird, a streamlined, blown Chrysler-powered car that met all the technical requirements of an A class sports racing machine and set a two-way average record of 228.571 mph. Fred Larsen upped his old A modified record a full eight mph by turning 220.251 with a blown Chrysler engine, and Els Lahn in his Wee Eel G streamliner averaged 147.564. Els continued to tune and run the Paxton-blown Morris-engined streamliner, re-qualifying at 179 mph, but weather and mechanical problems prevented two-way runs, so he had to be content with his 147-mph-plus record. /MT

EXHAUST BLAST OF B GAS CLASS FORD CAUSES STARTER BOB HIGBEE TO HOLD EARS AS CAR TAKES OFF.

Norm Thatcher's blown Dodge, out to beat Granatelli's 184.049 mph record, ran fast enough to qualify for a two-way run but was plagued with piston problems and had to retire.

Chuck Blue and his beautifully prepared B Gas class Ford with mag wheels ran strong and well, but his 155.85 mph was not enough to qualify for an attempt at the record.

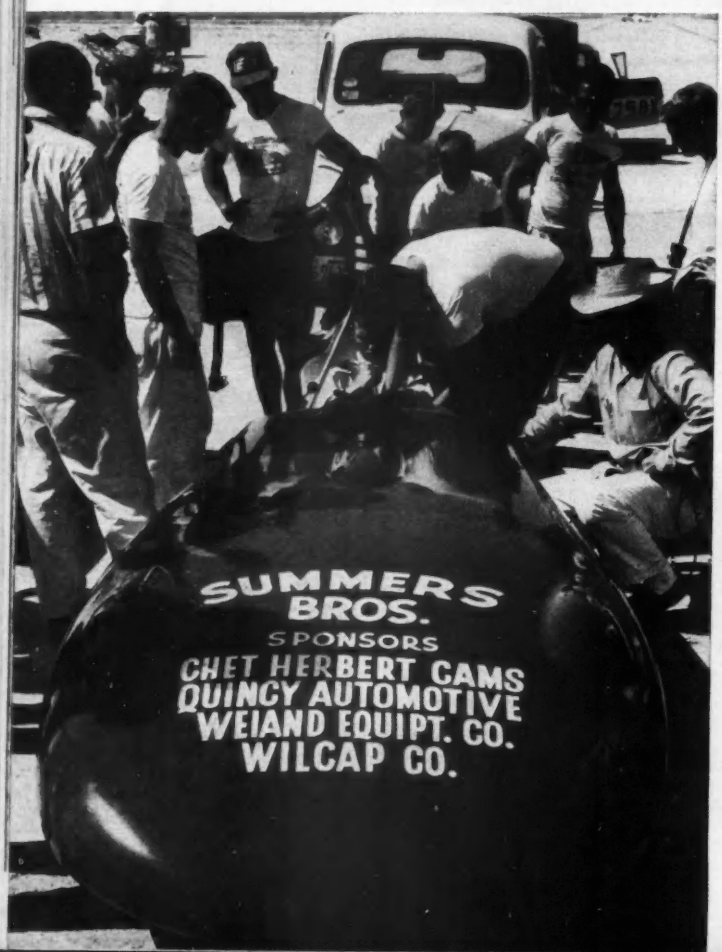
Volkswagen with bicycle-chain-driven Pepco blower, prepared and driven by Dick Beith, set new record of 101.696.

Chrysler-powered, supercharged T-Bird special, appropriately named Hel's Angel, set new Class A Racing record, 219.254. Best one-way run was 228.57.

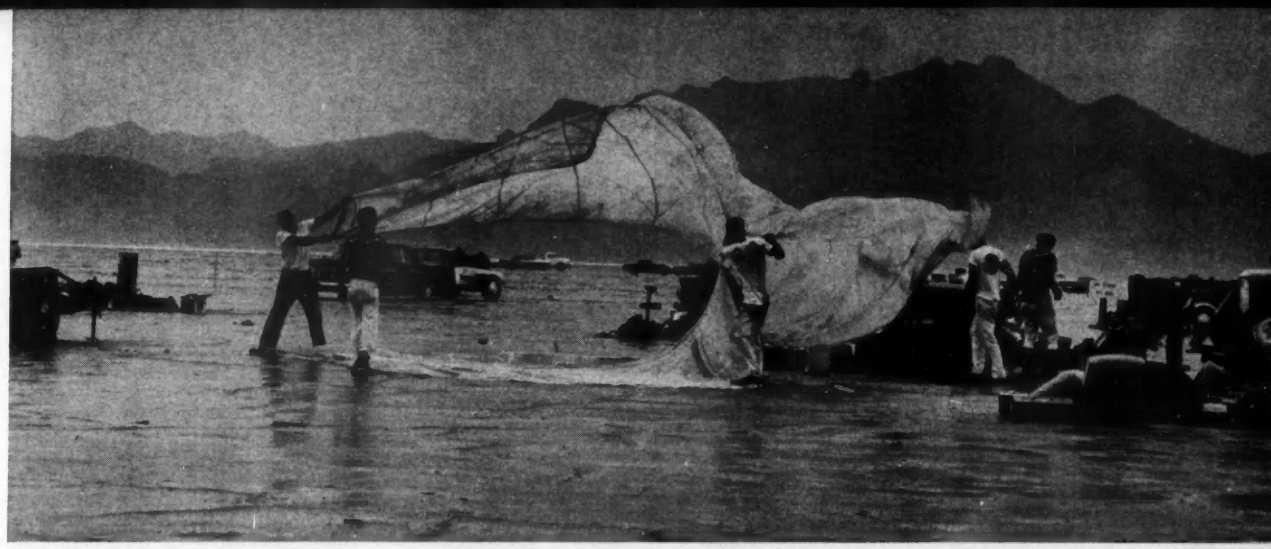
DICK GUYETTE'S REAR-ENGINED, CORVETTE-POWERED, OPEN-WHEELED LAKESTER HAD INTERESTING AERODYNAMIC BODY, WAS TIMED AT 184.

Wardrobe

Driving Summers Bros. tandem-wheeled streamliner was nothing compared to getting dressed for ride. Bob, in narrow cockpit, gets help from brother Bill to fasten belts, shoulder straps.

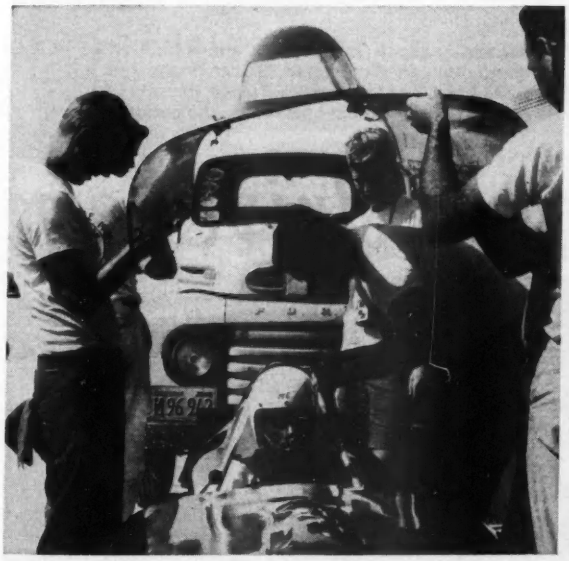


Bill prepares to slip crash helmet on Bob, who is wearing two pairs of gloves, fireproof face mask and oxygen-breathing apparatus. Rules require fireproof driving suit which Bob wears.



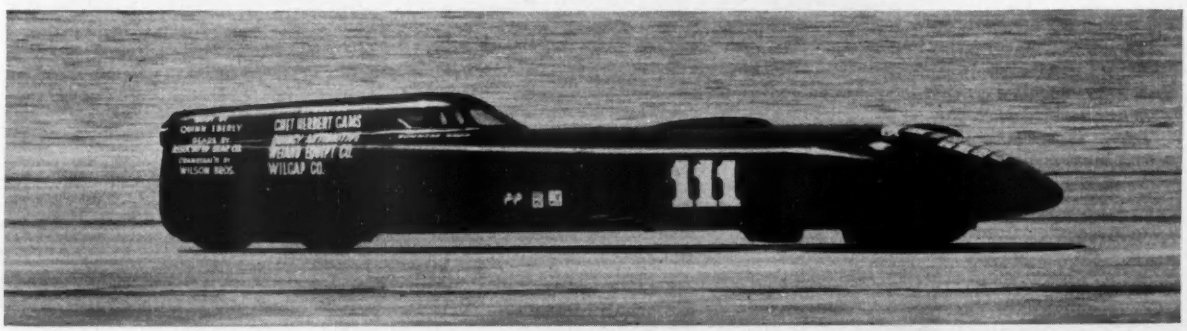
HIGH WINDS AND HEAVY RAINS PUT CREWS TO WORK SAVING SHELTERS, PROTECTING CARS AND TOOLS FROM SALT SPRAY, ENDED QUALIFYING.

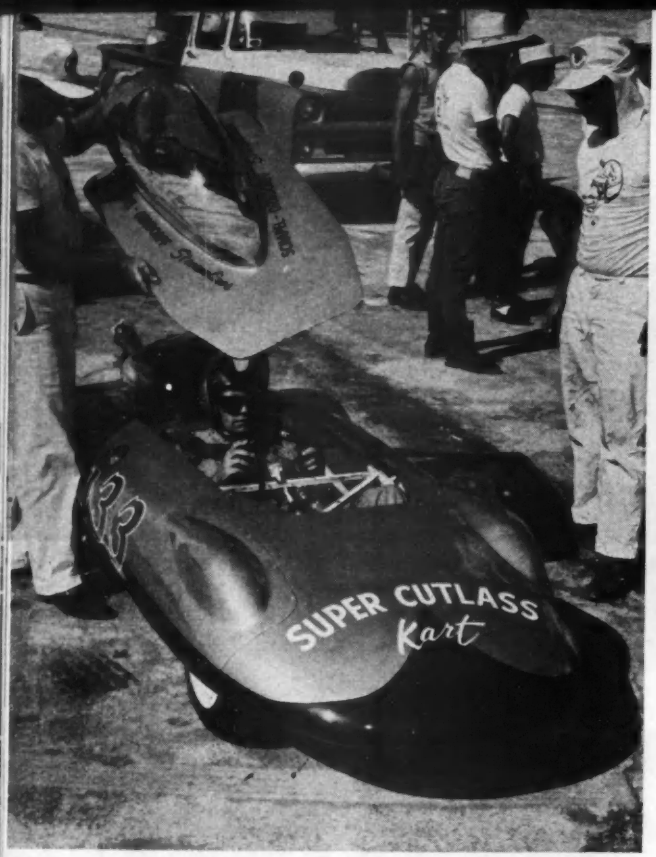
for Speed



COCKPIT CANOPY IS USED TO SHIELD DRIVER FROM SUN AS GOGGLES ARE SLIPPED ON, THEN LATCHED IN PLACE AS PUSH CAR STARTS.

ON HIS WAY, BOB SUMMERS IS HARDLY VISIBLE THROUGH WINDOWS OF CANOPY AS HE NEARS 300 MPH.





This is BONNEVILLE continued

Miniature version of Model T with a Crosley engine in rear leaves little room for driver George Butler to squeeze body and legs into short under-hood area.

Streamlined Schapel-Orndorff car ran in high 90's with small one-cylinder engine. Driver Craig Breedlove literally fits himself into car, like putting on a glove, before Schapel buttons on the canopy.

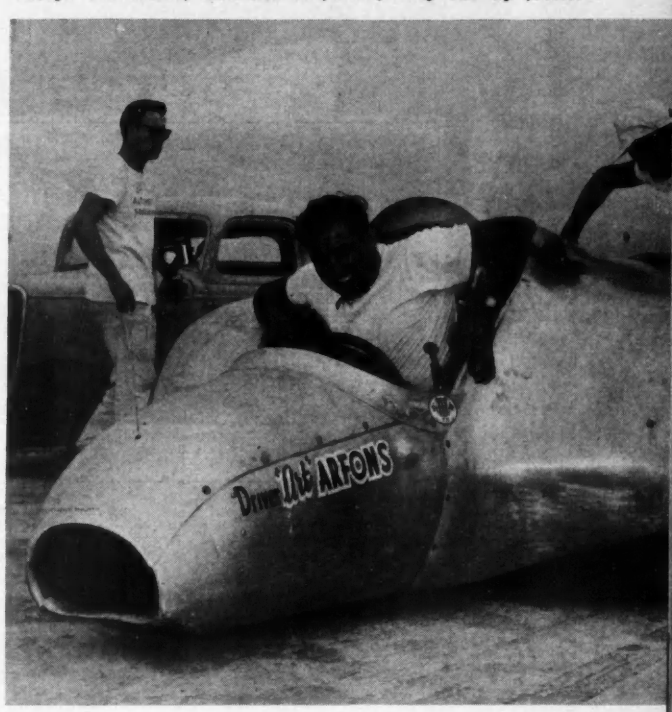
They don't drive 'em

Keeping it cool for driver is important when he is bottled up in a narrow-gauge streamliner like the four-cylinder Ford-powered Vesco, surrounded by roll bars and control rods.

Believe it or not, there's a man inside. Els Lahn's Wee Eel is dwarfed by the Thunderbird push car. Driver is in nearly fully reclined position, talks to push car by radio.

Aircraft belly tanks with big blown engines in rear leave little room for driver, who takes a nearly prone position.

Art Arfons' streamliner has everything between the wheels except the driver, who sits in form-fitting cab up front.



they wear'em

Mickey Thompson and Bob Laster wait with patience as Bill Burke, using every double joint in his lanky frame, slowly settles down into his Tempest-powered car.

Driving the

CHEVY II

A first turn behind the wheel of the new-size Chevrolet reveals the results of some interesting engineering

by Jerry Titus

EACH SUMMER, long before most folks begin thinking about next year's automobiles, Detroit cracks its factory gates open to journalists for a brief advance peek at the coming line. Often, in addition to the look, there is a chance to slip behind the wheel of a prototype or a pilot production model and drive it for a limited time on a proving ground. That is exactly what we were able to do with the Chevrolet II this year. There wasn't time for a full-scale, get-acquainted road test (which will come later), but it was possible to take an objective ride in Chevy's new line, size it up, and do a little early-season prognosticating on its success potential.

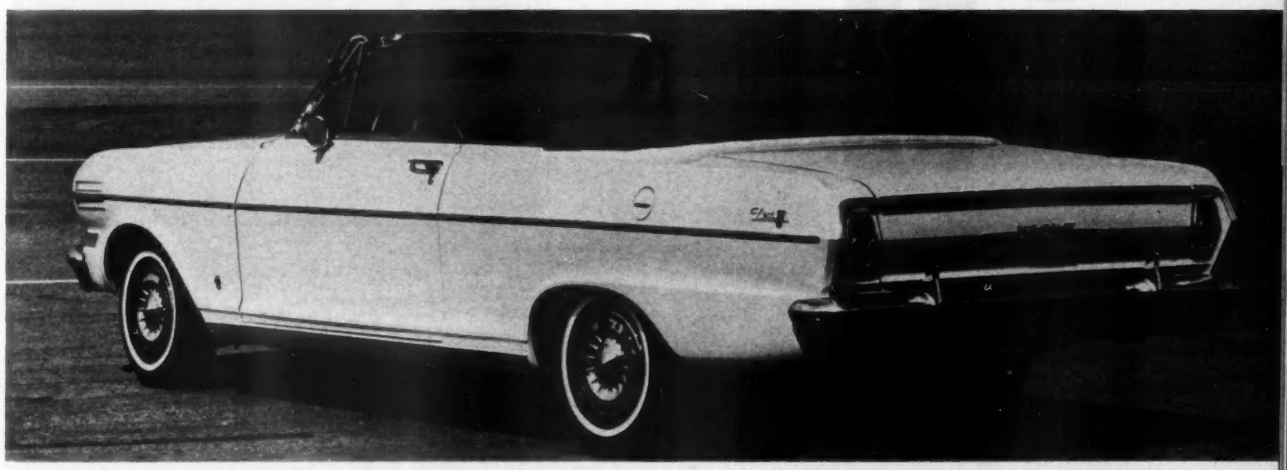
The Chevy II comes in three series: 100, 300 and Nova. We had the top-of-the-line Nova convertible. Power is from a 120-hp, 194-cubic-inch, in-line Six, the only engine available for the Nova. This same unit is a $55 option for the 100 and 300; standard is a 153-inch, 90-hp Four.

The Chevy II is on one hand a most straightforward car — simple, honest and conventional — rather obviously designed to compete directly with the Falcon, whose dimensions it closely parallels. On the other hand, it introduces the single-leaf rear spring, one of the most advanced suspension ideas to be seen in years. It is this unusual longitudinal spring, two per car, that gives the II much of its handling and riding personality. Very briefly, it varies in width and thickness throughout its five-foot length, is sandwiched in rubber at the axle (no holes in the spring) and is rubber bushed at the ends.

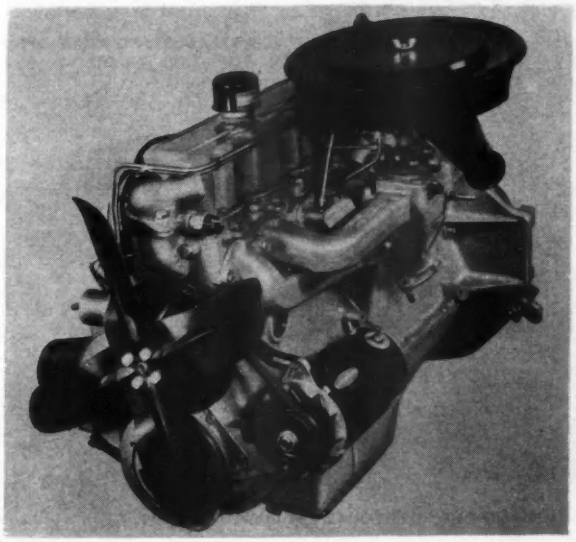
How it actually works seems almost contradictory. There is a great deal of body roll, but the car does not feel unstable. The ride is soft and pleasing, but not seasick-soft with the constant pitching and rolling that some cars have. In using a lightweight spring, Chevrolet engineers have gained a more favorable ratio between sprung and unsprung weight, which definitely helps the ride.

From the outside one gets the impression that the II is a small car, nicely proportioned, but definitely small. Once inside, that impression is knocked right out the door. Clever design work has kept usable interior space to a maximum, considering the car's overall dimensions.

Our Nova was easy to drive, easy covering two essential functions — steering and braking. Non-power steering is on the slow side (4¾ turns, lock-to-lock), but it was extremely light, which made the car easy to park and a one-finger exercise to steer while moving. Power-assisted brakes required light pressure and did their job without locking during hard stops.



CLEAN, SIMPLE, STRAIGHTFORWARD STYLING GIVES THE NOVA CONVERTIBLE PLENTY OF EYE-APPEALING CLASS FOR A COMPACT-SIZE CAR.



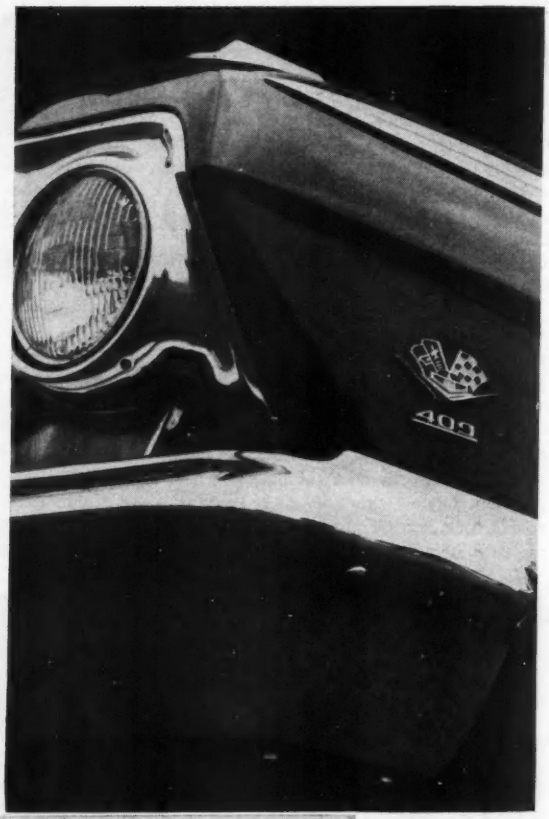
When power is rated at 120 horses and the curb weight is 2850, the result is moderate performance. With the Powerglide transmission (three-speed manual is standard) and a 3.36-to-1 rear axle, we were able to arrive at a 0 to 30 time of just over five seconds, about 10 seconds to 45, and a shade under 16 seconds to 60. Although top speed is 98 mph, the car seems at its best below 75, where it did not feel as though it were working hard. Fuel consumption appeared as though it would average out about 23 mpg.

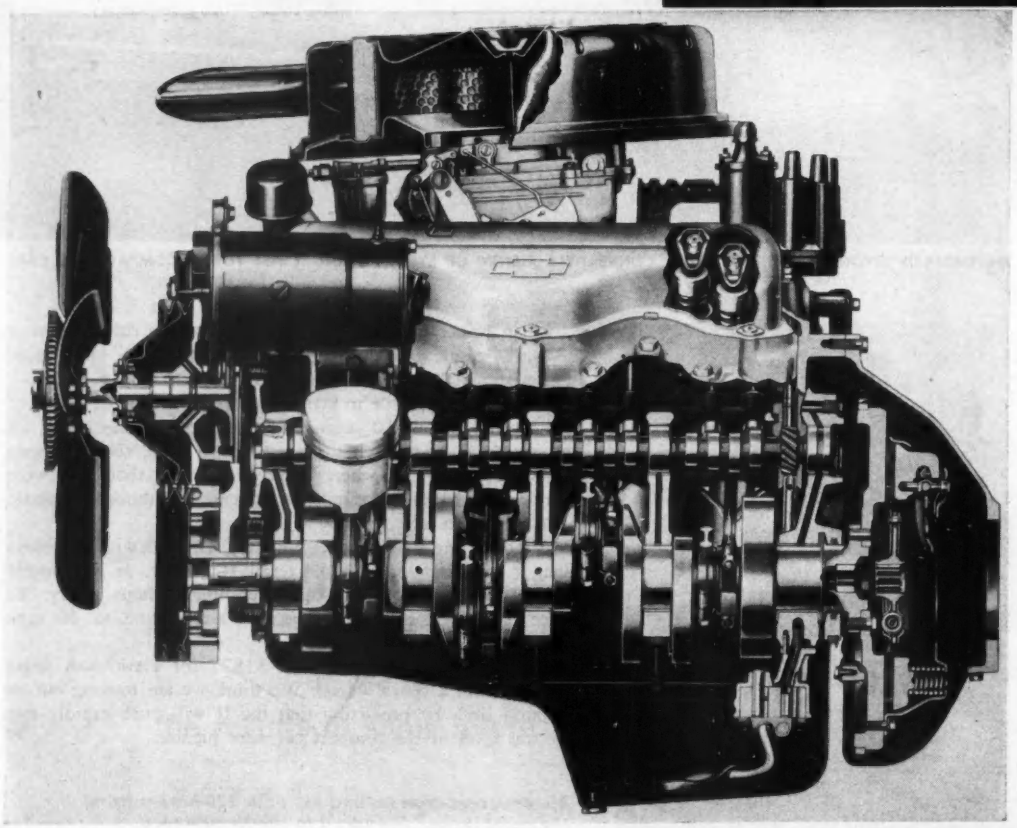
Although the four-cylinder engine doesn't go with the Nova line, it is important in the overall II picture. It is a sturdy engine, designed for wide-open running without injury. To place it in performance perspective, acceleration to 60 mph should take about 20 seconds.

Factory list prices range from $1827 for a two-door sedan to $2282 for a Nova wagon. We think we are moving out on a sound limb by predicting that the II will push rapidly into the top level of the compact car sales picture. /MT

All-new, cast-iron in-line Six pulls 120 horses from 194 cubic inches. Standard in the Nova line, it is an extra-cost option on the 100 and 300 series.

driving chevrolet's 409 SUPER SPORT





SUPER SPORT'S BIG 409-CUBIC-INCH V-8 WITH POWER OPTION PUTS OUT WHOPPING ONE HORSEPOWER PER CUBIC INCH.

A preview ride in the ultra-high-performance Chevy gives an exciting hint of the '62 duel of hot stocks

by Jerry Titus

CHEVROLET DESIGNERS do their best to think of everyone. The man who really fancies a Corvette, but for various reasons must drive a larger car, can have his '62 performance served up tastefully in the Impala SS convertible, which is one of the hottest traffic light dragsters going this year.

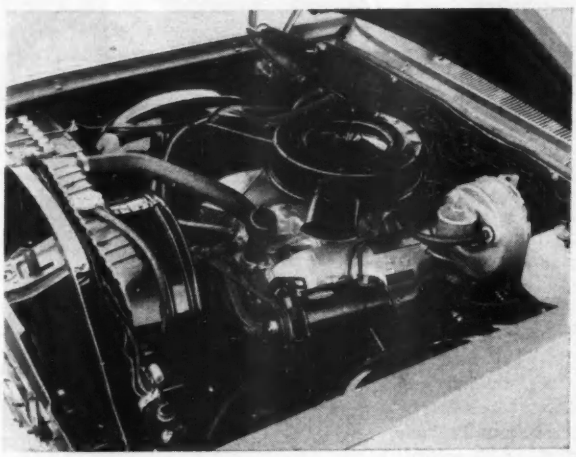
The SS is marked externally by an amount of extra deluxe trim that would mark the car as garish if it were not for the Impala's naturally handsome lines. Under the hood we find 409 cubic inches, the same amount available on order last year, now with some significant detail changes. First, the basic engine with single four-barrel carb develops 380 hp at 5800 rpm instead of 360. Second, for the super-fast enthusiast, there is a dual four-barrel manifold available that is rated at 409 horses (unique coincidence?) at 6000. Finally, compression has been dropped from 11.25 to 11 to 1, the head alloy has more chrome, aluminum pistons have been altered slightly, mains are heavier and intake valves larger.

With a car like this, there is only one question: Does it go? It sure does. Except for the station wagons, it is the heaviest in the line with a 3535-pound shipping weight. Even so, we found that it would accelerate Corvette-style up to 70 mph — and at 9.5 seconds, that's fast. It reached 45 in five seconds, 60 in 7.6, and crossed the quarter-mile marker in 15.4 seconds at 91 mph. These speeds were recorded with a manual four-speed transmission and 3.36-to-1 rear axle. Using 6000 rpm as a shift point, the Impala turns 55, 75 and 90 mph in the first three gears. Moving into really high speeds, it will catch the century mark in just over 20 seconds and pull a top of 140 mph. With a 3.08 axle installed and mufflers removed, top speed rating moves up to a dazzling 150 — from a stock production-line car!

Make no mistake — this is a big car. It feels big and it's loaded with space for long trips. Driver and passenger can relax in the big bucket seats, enjoying excellent visibility and all the comfort that 119 inches of wheelbase can give. But it handles far better than the typical "big car." There is a slight amount of understeer, but not as much as we have come to expect from this size auto. It is extremely controllable, stable and flat through the hardest and fastest corners. Its best comparison in handling is to the Corvette, which it closely emulates. The rated curb-to-curb turning diameter is just over 40 feet, but the Impala's sharp handling characteristics make it feel as if it would actually do better.

With so much speed on tap there must be a means of stopping it. Brakes checked out very well. Pedal pressure was moderately high but they hauled the Impala down from high speed time after time, fading slightly at a point far beyond normal driving requirements. Nose dive during braking (also tail squat on acceleration) was almost non-existent.

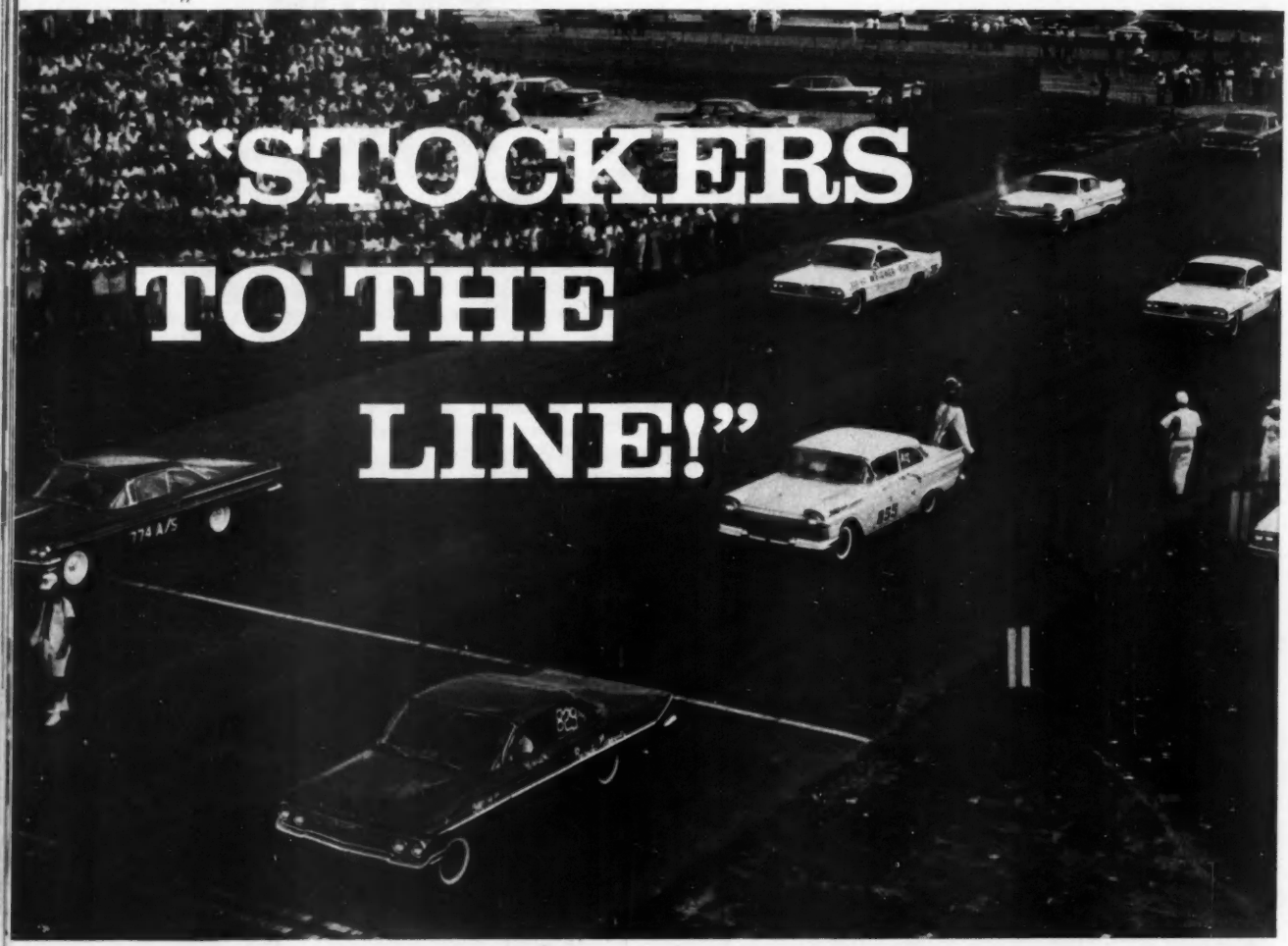
SUPER SPORT OFFERS A RARE COMBINATION OF ULTRA-HIGH PERFORMANCE, EXCELLENT HANDLING CHARACTERISTICS AND BIG-CAR COMFORT.



Engine and accessories more than fill the under-the-hood area. A dual four-barrel manifold is offered as option.

Tires installed on the Impala SS tried at the proving ground were not standard. They were 8.00 x 14 Goodyear Police Specials, designed for high speeds and top road-holding. They are available on order from Goodyear dealers and these or similar high-performance rubber should be considered for regular fast driving.

The SS isn't going to be an economy car, especially if it is driven anywhere near its capabilities. But for someone who isn't concerned with fuel mileage it will certainly offer a whale of a lot of fun in a rare combination package of ultra-high performance and general-purpose reliability. /MT



"STOCKERS TO THE LINE!"

A big field of top competitors battled for the spotlight at N.H.R.A. Championship Drags. The outcome: high excitement

by Roger Huntington

BIG LEAGUE drag racing, or even average Sunday afternoon contests on the small strips, is no longer a contest between a few wild, specially built machines. Today, the stock car is king — not only from a participant and spectator point of view, but also from Detroit's, where the manufacturers are keeping their eyes and ears peeled to the goings-on at the drag events. They used to say that the crowds came to see the hot dogs manhandle a lot of horsepower lashed to four wheels, but this is not true any more.

There was ample evidence at the National Hot Rod Association's National Championship Drags at Indianapolis last Labor Day weekend that the crowd was fully as interested in the stock eliminations as in the modifieds or rail jobs. They made just as much noise on the close ones. When Hayden Proffitt's '61 Pontiac ran off against Dave Strickler's 409 Chevy in the new Optional Super-Stock class trophy run the crowd was on its feet. Proffitt's winning elapsed time of 12.55 seconds and speed of 110.29 mph were faster

N. H. R. A. officials kept close tabs on competing cars to make sure that all were stock within the class specs.

than several all-out modified class wins. It's pretty hard not to be impressed by the bellowing exhausts, colorful paint and lettering jobs, lightning-fast shifting, lurching front ends you have when the big stocks run off. It's a real show.

And there's some real engineering being done here to make these cars go like this. The factories didn't do it all. The N.H.R.A. stock division rules leave enough leeway for the fellows to do some clever "setting up" on their own. The result is usually about a full second lower e.t. and 10 mph greater trap speed than when the car came off the factory assembly line. It's a fascinating story . . .

THE NEW EQUIPMENT

Finding an adequate definition of the term "stock," and then keeping close tabs on what equipment is actually stock and what isn't, is a perpetual problem for drag strip officials. The fast-moving performance development programs in several of our auto companies only complicate it. Last year, only a few weeks before the Nationals, several companies brought various new pieces of speed equipment to N.H.R.A. officials and asked that they be certified as "stock" for use in the coming races. The N.H.R.A. men decided against it, feeling that the equipment wasn't distributed widely enough to give everybody a crack at it. But they did say that special equipment would be eligible for this year's Nationals if the factories would file specifications not later than July 1, 1961.

The new plan was only half successful. Four companies — Chevrolet, Ford, Pontiac and Dodge — filed specs for new options, but the description and specs were so sketchy that N.H.R.A. tech inspectors would be hard put to identify the new parts. Furthermore, the new parts were still in short supply. Only a handful of the top boys actually received them — and none of them more than two weeks before the Nationals. There was no choice but to put these cars in a separate "Optional Super-Stock" class (with stick and automatic sub-classes).

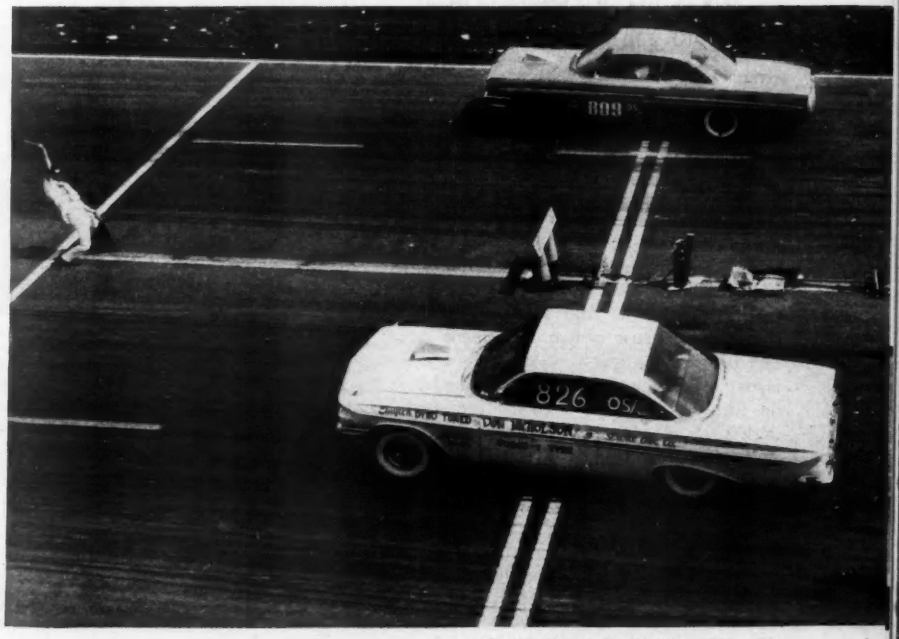
To review the new equipment very briefly: Chevrolet has a new dual four-barrel carburetion system, new cylinder heads with ⅛-inch larger intake valves, bigger ports and larger water passages, and a new camshaft for the 409-cubic-inch high-performance block. They advertise it at 409 hp. Ford has retained its 390-cubic-inch 401-hp three-carb job with practically no changes, only stronger flat-top pistons and new dual valve springs. For the chassis they now offer a four-speed floor-shift transmission, with gear ratios falling in between the close Corvette gears and the wider ratios for Chevy and Pontiac big cars. Pontiac uses basically the same Borg-Warner transmission, along with a new long-stroke forged crankshaft and 1/32 oversize forged pistons to give a whopping 421 cubic inches. They also have dual four-barrel carburetion, a new long-duration cam and eight-quart oil pan. They claim a modest 373 hp for the new engine! Dodge has released the Chrysler 300 cylinder heads (1.74-inch exhaust valves) for use on the 383- and 413-cubic-inch blocks, plus new Forged True pistons with domed heads for 12-to-1 compression ratio — along with the earlier 284-degree duration solid-lifter cam and short ram manifolds with dual four-barrels. The 375-hp rating is continued on the big 413 with short rams and hot cam.

It was pretty obvious from the times at Indy on these 3700-pound cars that any one of these new engine combinations, when set up and tuned to perfection, was good for well over 400 honest horses at 5500-6000 rpm. Top speed for the Pontiacs in time trials was 111 mph, the Chevys hit 110, Dodge 108, and the top Ford time was 106-107 mph. Admittedly, the boys in the know weren't buying the 12.55 e.t. on Proffitt's Pontiac. It is known that the Chrondek system will sometimes fail to click if the light beam is broken slowly, as when a car eases off the line slowly. This is Proffitt's normal starting technique, getting on the throttle hard after the car is rolling 10 or 20 feet out. It is possible that his *rear* wheels tripped the clock on this run — which would account for nearly a full second on e.t. (The car he beat on this run turned a 13.9, and he was only two car lengths ahead.) Perhaps a 13.2 e.t. and 110 mph is closer to the true potential of these cars.

But these new Optional Super-Stock cars were all pretty close. Hayden Proffitt won the O/SS class eliminations with Mickey Thompson's '61 Pontiac coupe with the big engine bored .060-inch to 433 cubic inches. (This is the maximum legal overbore in the stock division.) Then Don Nicholson cleaned up top Stock Eliminator with his 409-cubic-inch Chevy in separate run-offs on Monday. On his run against the '61 Dodge (incidentally, sponsored by the "Ramchargers" Club of Detroit, a group of young Chrysler engineers), Dodge driver Al Eckstrand missed a shift. The crowd howled for an unofficial re-run, and the Dodge came out on top. Then they were howling for "two out of three" . . . and this time Nicholson did the job by two car lengths. (Nicholson's car was later disqualified on final tear-down for a series of non-stock items.)

ENGINES

Several engine modifications are legal in the N.H.R.A. stock division that have a big effect on performance. Most of your top boys tear their engines down completely and give them a very careful balance job. Piston and bearing clearances are increased substantially to let the engine run freer and reduce friction. (Internal friction can easily eat up 100 hp at 5500 rpm on a big V-8.) Valves are ground, carburetors enriched. The new rule allowing "any battery ignition system" has brought more dual-coil setups, Mallory Magsparks, etc. The spark advance curve gets a lot of attention. Heavy



Impartial inspections resulted in several disqualifications. Potent O/SS Chevy shown at right was found to contain several non-stock items.

Over 700 stockers of all classes were entered in this year's Nationals. Resulting action generated every bit as much interest from the crowd as did the modified and rail classes.

STOCKERS TO THE LINE!

continued

passenger cars appear to come off the line better if the initial (static) advance is set way ahead of the factory-recommended point — maybe between 12 and 22 degrees of crank rotation. Then they like to advance it rapidly from there, so it reaches its maximum advance of 36-42 crank degrees by the time the engine hits 2000 rpm. For all practical purposes they're running with *constant* advance over all but maybe 40 feet of the course! I noticed more and more of this wild early advance on stock cars this year. And apparently it's paying off — they jump off the line like nothing you can imagine. Despite this new rule, the top performers are still using stock ignition systems with modified advance characteristics.

Chevrolets and Pontiacs with hydraulic lifters have a distinct advantage over other hydro-lifter cars. With their unique ball-joint rockers, the valve clearance can be adjusted to the point where the lifter plungers are right out to the end of their travel. At this point they have *solid* lifters for all practical purposes — and can wind out to 6000 rpm with no trouble! The sharpies all do it. And I noticed more and more exhaust system refinement on the stockers this year. The new "Jardine" layout is where we have the four cylinders on each bank of a V-8 paired into two outlets in such a way that exhaust impulses in each pipe do not overlap and restrict each other. (On most V-8's you would pair cylinders 1-2 and 3-4 on the right bank and 1-3 and 2-4 on the left.) This system is growing swiftly in popularity. But you find most of them on the big super-stockers. The installations cost $100 to $150 — and apparently the boys with the smaller engines can't get that much extra horsepower. But they get results on the big engines. One SS car owner reported a jump in trap speed from 103 to 107 mph with no change other than the addition of a set of Jardine headers! I believe they're the coming thing in the stock cars.

One of the weakest points on the modern super-stock engines are the valve springs. The high valve reciprocating weights, high rpm's, and violent cam lift rates combine to beat the life right out of them in what seems like a few dozen runs. The boys have to check them constantly. These are by no means practical street machines!

TRANSMISSIONS

The transmission field has undergone a revolution in the last year. The manual-shift box still continues to out-perform the automatics, but the boys are no longer satisfied with sloppy column shifting linkages — or even three speeds forward when they have a choice of four. The four-speed floor-shift box is the overwhelming choice where available (as on Pontiac and Chevy). The closer ratios allow the engine to be held in a narrower, higher-efficiency rpm range, and the shorter rpm drop between gears allows quicker shifts. Many fellows, in fact, choose the optional close Corvette ratios instead of the wider passenger car gears. But there are notable exceptions: Hayden Proffitt uses a heavy-duty three-speed in his Pontiacs. He thinks that 2/10-second or so making the extra shift more than offsets the effect of the narrower rpm range. He winds to 6500 in low and 2nd with the three-speed.

This brings up the subject of the floor gearshift conversion kits. Let me assure you that these have definitely caught on. Most of the manual-shift three-speeders in all classes had them. Shifting is much quicker and more positive. They appear to save an average of maybe 2/10-second on e.t. and one mph in speed. But quality, beef and careful engineering are vital in this area. It was significant that the majority of cars used the deluxe $65 Hurst linkage.

The modern Detroit automatic transmission is a very complex mechanism — and you wouldn't blame the backyard mechanics one bit if they decided to leave well enough alone. But, sure enough, they're geting inside there and doing some tinkering — and coming up with modifications on oil pressures, spring loadings, relief valve settings, etc. that give harder, more positive shifts and a longer wind in each gear. It's very effective on drag strip times. And they're hooking automatics to big, hairy engines that are strictly out-of-bounds for the design load

Complete tear-down of eliminators was mandatory. N.H.R.A. inspectors checked every engine detail — even recorded manufacturer's part numbers to insure that everybody stayed within specifications. Often manufacturers fail to list their option specs with N.H.R.A. in time to have them approved for meet.

factors. N.H.R.A. rules permit swapping transmisisons in a given line of cars, so the boys are using automatics with big SS engines that were intended only for heavy-duty stick boxes... and getting away with it very nicely. The loads on these clutches and bands when they shift must be fantastic!

SUSPENSION

Two years ago the stock boys rarely did anything with their suspension systems to adapt for drag strip conditions. Today they all but rebuild the chassis from stem to stern. Some of their reasoning is not based on sound physical fact — but they're getting results. A look at the new e.t. records will convince anyone.

The whole idea is to improve the initial traction off the line by increasing the front-to-rear weight transfer (so the extra load on the rear tires will give more bite). But there seems to be little agreement on methods or effects. Most of the fellows raise the front end of the car and lower the rear. (With a coil spring front end this is generally done by putting spacers between the coils. With coils in the rear they usually torch the spring or cut off a couple of coils. With leaf springs they just use lowering blocks between the spring and axle. The average effect is to raise the front two inches and lower the rear the same amount.) Why do they do this? Some say they raise the front to *save the power necessary to raise the heavy front end* when the car starts up. Any lifting of mass takes some power — and this has to come from the engine. This makes sense. Others say the angular "rake" of the body moves the center of gravity back an inch or so, so there is more static weight on the rear wheels. This effect would actually be very small.

But I note a few of the real sharp boys have a little different view of this whole concept. They use very *soft* springs and shocks in the back, so the body naturally settles back. And when the car accelerates off the line, and weight is transferred back, the suspension gradually comes down solid. By timing their power surge on the throttle to the instant the rear end comes solid, the sudden increase in rear tire bite gives a terrific initial lunge. Very soft front shocks are also used to help the body settle back. Nobody has done any experimenting that we know of to prove that all this really works, but there's no doubt the boys are getting out of that chute faster than ever before.

Incidentally, it is vital that there be no rear axle torque "wind-up" during this initial lunge — as this usually starts a wheel-hop that kills traction immediately. Most cars using leaf springs in the rear have auxiliary torque-resisting arms of one kind or another (usually Traction-Master commercial links). Even the coil-spring jobs are starting to use the new Traction-Master braces. These parallel the main trailing arms, but the bushings are much less flexible — so the whole rear end is more firm. Rear axle torque control is definitely a must for low e.t.'s with heavy passenger cars.

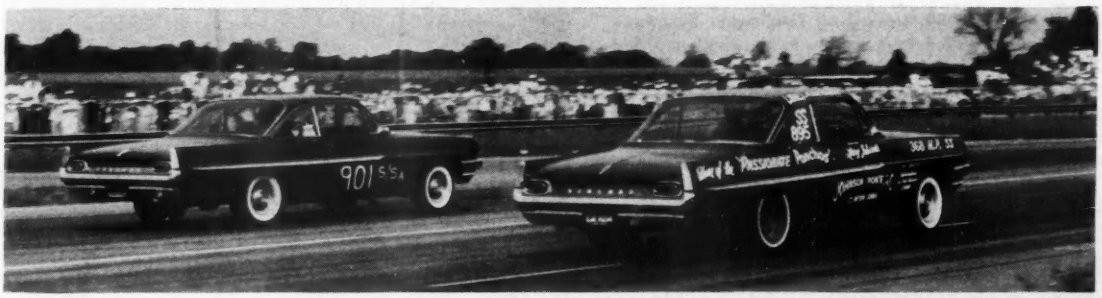
TIRES

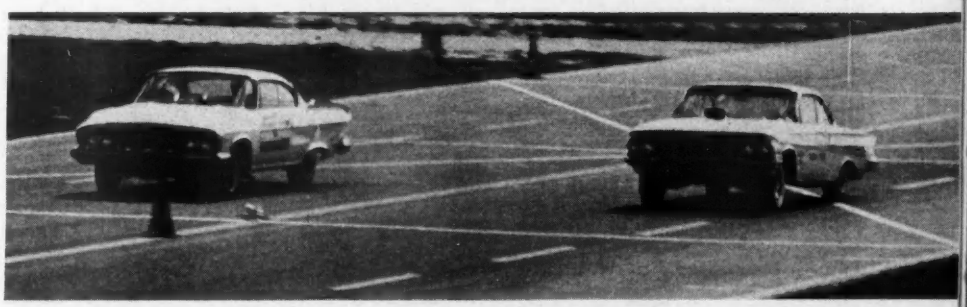
There is little question but that tires are responsible for much more of the recent gain in e.t. than any fancy chassis setup. That rubber tread rubbing on the pavement is right where the bite really lives.

N.H.R.A. rules permit soft gum-rubber "cheater slick" recaps in the stock classes, as long as the tread is no wider than the stock tire, and as long as there is some sort of anti-skid tread pattern. The cheater slicks used to be all the rage a couple of years ago. Then along came the premium butyl rubber tires early in the summer of 1960. This synthetic compound is much less elastic than conventional synthetic and natural rubber compounds, so gives a better bite on both wet and dry surfaces. It wasn't long before most of the boys were on butyl, even though they cost nearly twice as much as cheater slicks and wore out faster than standard tires. Most fellows say a butyl tire will give better bite than the average cheater slick, though some won't agree. But they *do* appear to give more *consistent* bite when spinning hard — which is the way most of the fellows come out of the chute these days.

This was the situation up until a few months ago — when the now-famous Vogue premium tire appeared on the scene. This is a limited-production six-ply nylon tire that averages about $100 each. The tread compound is not butyl, but it is very soft, about ⅛-inch deeper than conventional premiums, and a good ½-inch wider for a given tire size. They say the bite is better than butyls... as long as you don't break 'em loose and burn hard. Traction falls off swiftly as the tread temperature builds up, unlike the butyls. The Vogues require a little different driving technique. But they do a job. Most of the big SS cars had them at Indy. The boys in the lower classes didn't seem to care so much.

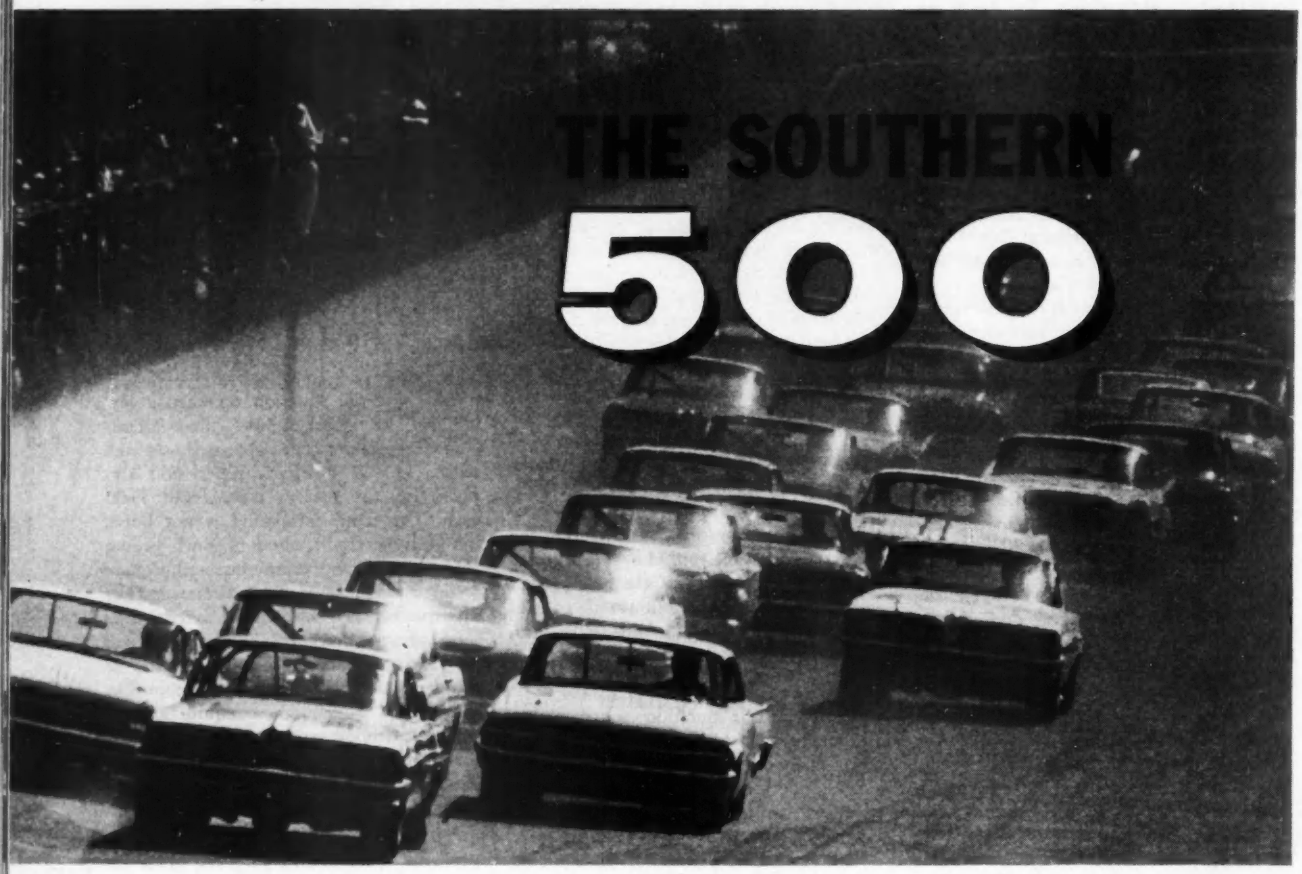
The search for traction these days is probably more intense than the quest for horsepower. /MT





Many suspension combinations are tried with varying results. In top picture cars are just coming off the line. Bottom photo shows another pair almost at the lights. Note unusual attitude of Chevy on far right.

THE SOUTHERN 500



by Max Muhleman

AS THE BRIGHT YELLOW FORD streaked off Darlington Raceway's fourth turn and pointed its nose toward the checkered flag being unfurled at the finish line, a screaming throng of 75,000 leaped to its feet to hail the winning driver, Nelson Stacy, a barrel-chested 39-year-old grandfather from Hamilton, Ohio.

Only once before, in 1959, when Yankee Jim Reed of Peekskill, New York, stole the show, had an "outsider" been able to crack the select circle of southern-bred racing greats who usually dominate the 500.

Stacy's Darlington entry was hardly noticed. On the first day of qualifying trials, all eyes were on Fireball Roberts and Fred Lorenzen, who had been figured as co-favorites in the race from the first practice rounds. True to billing, Roberts nipped Lorenzen in an intense battle of nerves for pole position honors. Lorenzen had broken the standing Southern 500 qualifying record only to see Roberts wring a four-lap 128.680 mph average out of his Smokey Yunick-built Pontiac — less than half-a-mile-per-hour better, but good enough for the number one starting spot. Stacy, meanwhile, began to get some deserved attention when he slipped into the number three starting position.

The two-abreast starting system now employed at all NASCAR tracks thus found Roberts' Pontiac and Lorenzen's Ford side-by-side on the front row. At the green flag Roberts, who had slowed the 43-car starting field to less than 70 mph on the pace lap, slipped into second with his four-speed gearbox and darted into the one-groove first turn at the head of the field. Lorenzen was caught by surprise by Roberts' shrewd maneuver and had to settle for third place on the first lap, right behind Stacy, who had glued himself to Roberts' back bumper on the start. In short order, however, Lorenzen moved by Stacy and then by Roberts to take the lead.

Immediately, strategies became apparent. Lorenzen had set full-throttle sail, determined to pour it on all day. Roberts proved the surprise of the day by choosing to run at a steady pace rather than race anyone. So, it emerged, had Stacy, although few noticed.

But the good fortune which had been Lorenzen's at Darlington in May when he won the Rebel 300 was not his Labor Day. First a brake line was cut by "something on the track." Then he creased a left front fender when a car went spinning wildly out of control off the treacherous fourth turn. Frantic but lengthy pit stops had no sooner corrected these problems than his accelerator jammed, causing him to crease the fence. The car was retired.

Now attention turned to Roberts, whose unfamiliar pacing tactics were keeping him in and out of the lead until young Richard Petty pushed his Plymouth out front for a reign of some 50 laps. To the delight of his father Lee, who was overseeing pit operations with a walking crutch to support the leg he mangled in a February accident at Daytona, Richard returned to the lead after his first pit stop, only to finally suffer an engine failure just past the halfway mark.

With Petty's persistent Plymouth eliminated and some 200 miles remaining in the $90,000-plus battle, fans watched Roberts, Stacy, David Pearson and Jim Paschal swap the first four positions in a mechanized game of musical chairs.

The staggering heat began to take its toll. Former winner Jim Reed all but collapsed on his third pit stop and had to be relieved. Track surface temperature was announced as 155° as Junior Johnson, one of the hardiest souls on any racing trail, abandoned his Pontiac, allowing Lorenzen to take over in relief. Paschal, who has run all 12 Southern 500's, requested a relief driver for the first time in his career.

On his next-to-last pit stop, with 150 miles to go, the yellow Ford of Nelson Stacy slipped to third on the scoreboard, nearly a lap behind the Pontiacs of Roberts and Dave Pearson.

Just when it seemed that Roberts' cool head was destined to pay dividends, Nelson Stacy's star began to shine. With 88 laps remaining, Roberts brought his black and gold Pontiac to a halt at his pit for what seemed sure to be his final stop. He had caught another yellow flag, as he had been doing all day, and Stacy had just been forced to pit under the green, going a full lap behind.

But in Roberts' pit, mechanic Smokey Yunick knew that all was not well with his chauffeur. He had summoned Marvin Panch, whose Petty-built Plymouth had long since been retired, to stand by prepared to drive the last leg of the race. "Heat's getting him," observed Yunick even before Roberts had stopped.

Yunick had guessed correctly. When Panch moved toward the car Roberts readily accepted the breather and crawled out one window as Panch scrambled in another. Once on the ground, however, former baseball pitcher Roberts found his knees would not hold him up. He lunged for a bench and slumped to the ground as if shot. After Panch had been ushered back onto the track, mechanics heaped ice on Roberts' head and fanned him.

Stacy, who had begun to run his Ford as fast as he could push it around the track, unlapped himself. There were less than 50 laps remaining now, but the crowd had sensed Stacy's charge and began to cheer him on. He cut steadily into Panch's margin and when the spread fell to less than half a lap with some 30 laps to go, Roberts walked to the edge of the track and gave Panch the sign to go all-out. But bullish Nelson Stacy had truly turned El Toro. He refused to be outrun on even a single lap and continued to chop away at Panch.

On and on he came, surging at last into the same straightaway with the Pontiac which had qualified faster than any machine in the field, and then, with a dozen laps remaining, a spinout on the track brought out a caution flag which allowed him to literally breathe down Panch's neck.

As the pace car pulled off the track and the green flag cut Panch and Stacy loose again, patrons in both straightaway grandstands rose en masse to see if Stacy could bring his amazing stretch run to fulfillment. Immediately Stacy began challenging Panch each time their cars hit the home straightaway. He tried him inside, then outside, then, with seven laps to go, whipped inside and squeezed by in the first turn as both cars wobbled uncertainly for a frantic moment.

A deafening explosion of sound from the stands told those who might have missed it that Stacy had made it. Panch hung on grimly, running a mere 3½ seconds behind when Stacy acknowledged the checkered flag.

"Sorry, Smokey," apologized Panch as he climbed out of the car afterwards. "She was running out of gas those last few laps. It lagged just a little in the turns, just enough to let him catch me there," explained the man who had won the Daytona 500 in February in a 1960 Yunick-built Pontiac.

To be sure, Panch had accomplished no small feat in keeping the car between the guard rails when Stacy dived inside him in the turn. Roberts and Yunick knew also that 88 laps on a tank of gas would be pushing it. Roberts, in fact, had suggested to Yunick that Panch be waved in for fuel "just to be sure" if the opportunity presented itself. The chance, of course, never came.

As usual, the race was replete with unusual twists of fate. Defending champion Buck Baker, a two-time Southern 500 winner, had moved his '61 Chrysler into second place at the halfway mark when a connecting rod in his engine slipped out of place, forcing him to retire. National point leader Ned Jarrett had driven the last 250 miles with a broken push rod rammed clear through one valve cover, but it slowed his '61 Chevrolet only slightly. He managed a sixth place finish, protecting his slim lead over 1960 national champ Rex White.

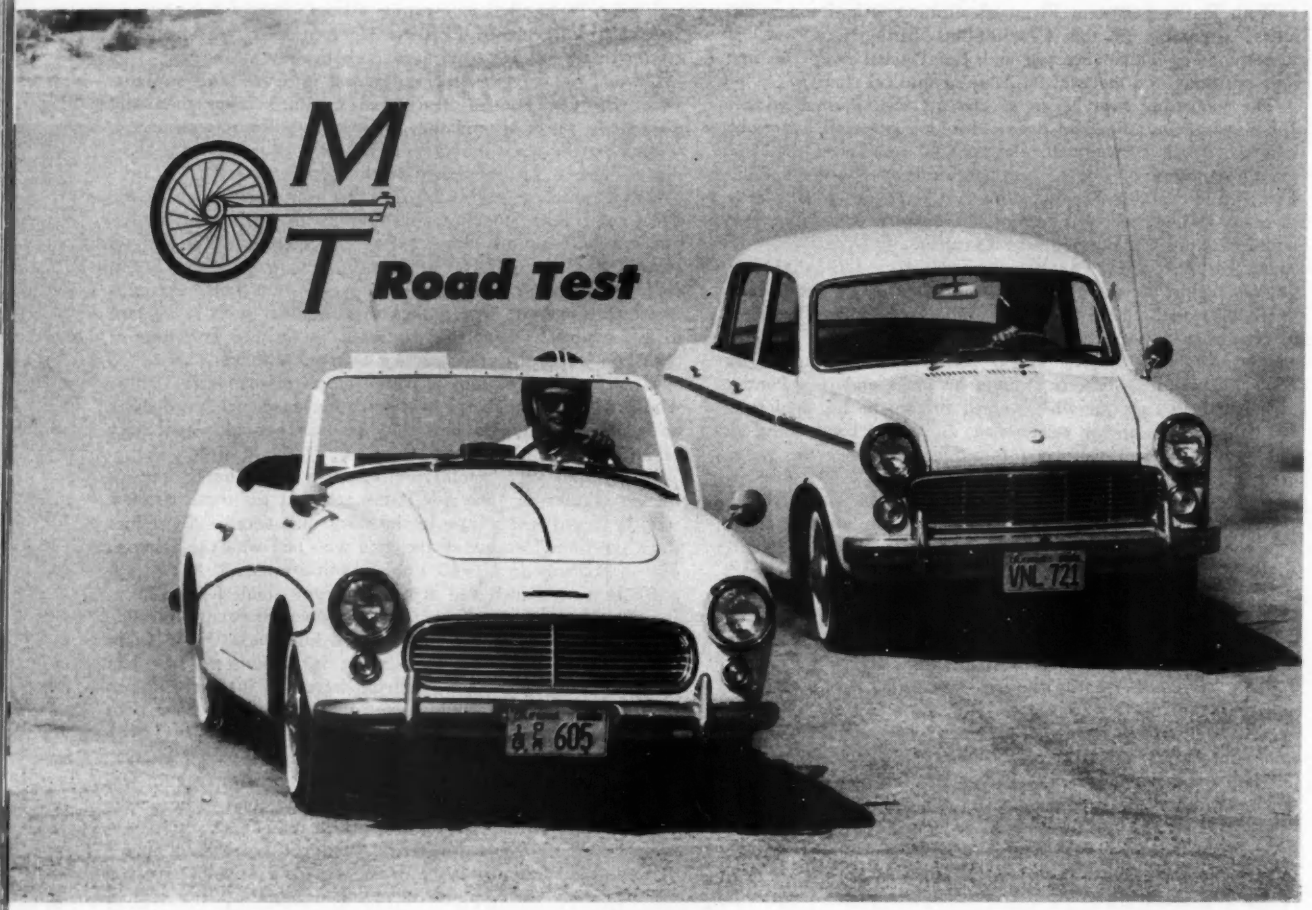
White had his Chevrolet disqualified on race morning when his engine was found to have been lowered and moved back "1½ inches." He started in a '61 Pontiac owned by Jack Smith.

But all the talk was about the amazing Mr. Stacy, who only ran harder when his competitors began to wilt. It was a mystifying puzzle to most until it finally emerged that Stacy had cut his driving teeth on one of Patton's tanks during World War II. After chasing the Nazis out of Africa, chasing a Pontiac was, after all, nothing overwhelming.

Stacy averaged a record 117.787 mph for his 500-mile ride to a $20,000 payday. /MT

Biggest thrill of the day was this climax of a tense duel, as winner Stacy pulled his Ford inside to pass Marvin Panch and win event by 3½ seconds.

It was an excited crowd of workers and well-wishers which climbed aboard Stacy's car and shared with the 39-year-old winner the ride to the trophy.



DATSUN
SPORTS CAR and SEDAN

by Wayne Thoms

IT IS NOT SURPRISING that the Datsun is built with emphasis on quality and rugged reliability. Both these factors shone uppermost in our test Datsuns, the Bluebird four-door sedan and Fair Lady sports convertible, confirming the knowledge that Japanese technology is equal to the best in the world.

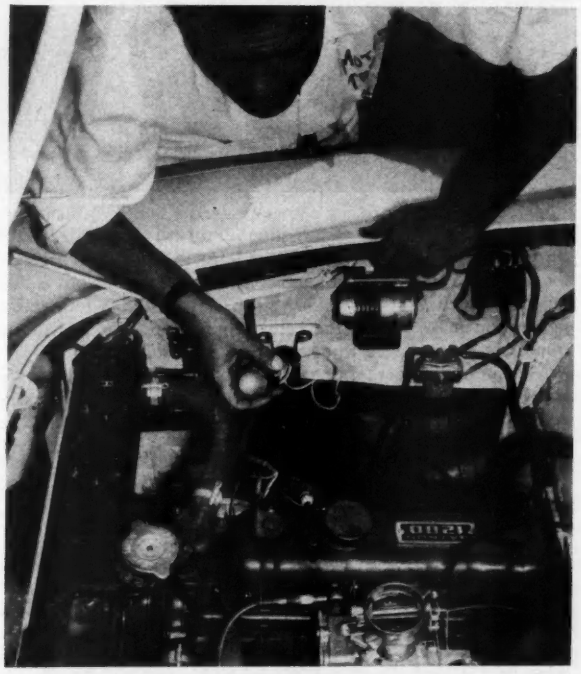
Comparing the economy-utility Bluebird with the Fair Lady sports car, as we have done, hardly seems fair, yet in this instance there are good reasons. It permits us to point out the basic similarities, of which there are several, while presenting independent conclusions on both cars, as well as reviewing Datsun's overall technique of engineering cars for the fiercely competitive U.S. market.

Utilizing the same engine gives the two cars distinctly similar personalities. Strongly influenced by the BMC A-type, the four-cylinder mill develops its peak 60 hp at 5000 rpm, yet buzzes along willingly at the 6000 we used for shift points without notable protest. That the engine will hold together at high revs is indicated by a Fair Lady prepared for sports car racing. Its engine is regularly turned to 7500 rpm — and it has yet to come apart.

The two cars perform remarkably alike as far as speed is concerned. Both convertible and sedan have identical dry weights, the same rear axle ratio and, while they use different size wheels and tires, the loaded radius of the rear wheels is very close, giving near-identical mph/1000 rpm figures. Consequently, acceleration was almost equal. The slight difference came in the fact

Both of the test Datsuns were powered by the same 72.5-cubic-inch ohv Four. A four-speed transmission and streamline style accounted for Fair Lady's performance.

Built-in trouble light with long cord eases night repairs, although engine is so reliable it won't be used much.

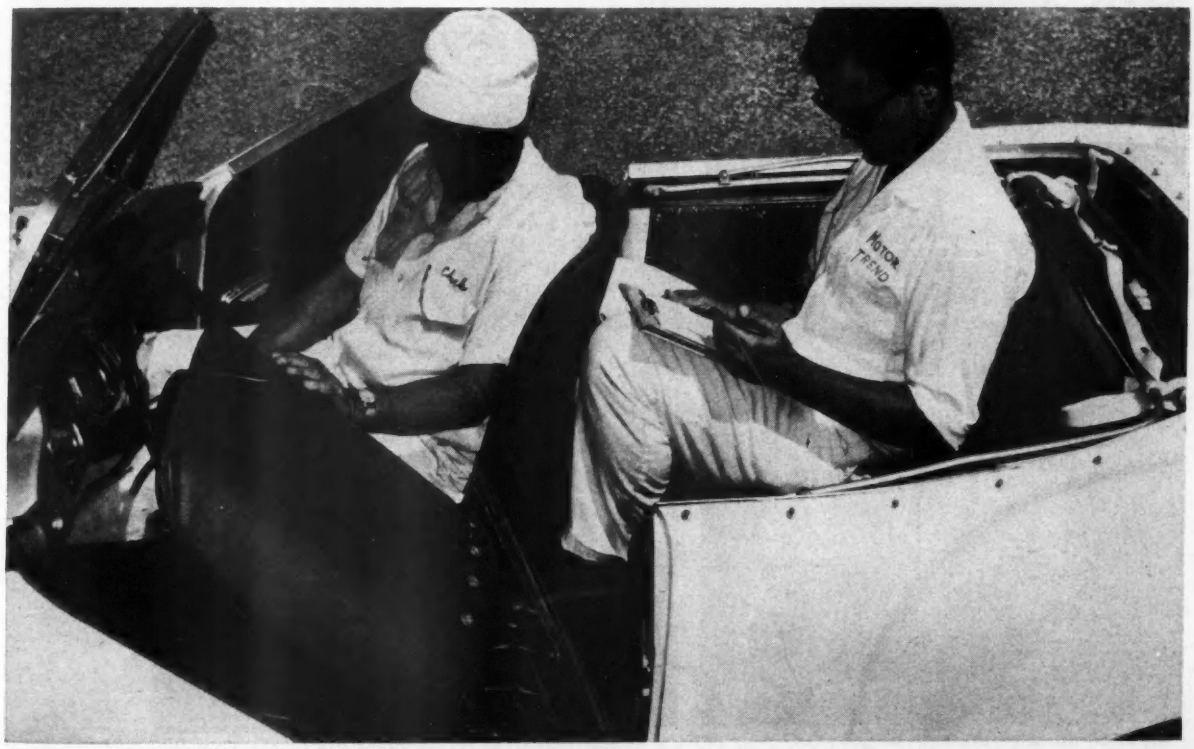


that the sedan uses a three-speed transmission; the convertible a four-speed. Rated top speed of the sedan is 80 mph; because of better streamlining the convertible has an 82-mph top end.

Differences began to assert themselves in the handling at higher-than-average speeds, largely because of front suspension differences. Not only is the Fair Lady more stiffly sprung, it carries a pair of longitudinal torsion bars up front where the Bluebird has conventional coils. Both cars can be cornered with considerable enthusiasm, the primary differences being more body lean on the part of the sedan. We found considerable understeer, with rear end breakaway signalling itself in plenty of time to be controllable.

Steering is fast — 2¾ turns, lock-to-lock — and moderately heavy, but the small 32-foot turning circle for both cars more than compensates. Parking, ducking into restricted traffic areas — handling generally can be performed with precision.

Gear boxes tended to be stiff but without extraneous motion. The convertible's floor-mounted standard H-pattern has short



FAIR LADY CONVERTIBLE IS ONE OF THE SHORT-WHEELBASE SPORTS CONVERTIBLES THAT HAVE A TRULY FUNCTIONAL REAR SEAT.

The sports version takes corners with more enthusiasm than its sedan counterpart, due to stiffer springing (torsion bars).

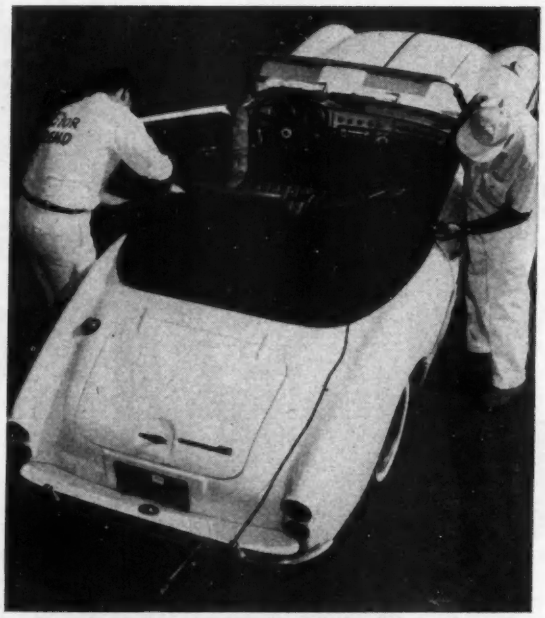
The top-up position still offers plenty of headroom for passengers, front and rear. Side curtains go up in bad weather.

throws and its position should suit most drivers. Even though the sedan's three-speed column-controlled transmission is all synchro, which was very satisfying in slow traffic, a four-speed box would make up for the between-gear gaps that go with a small engine pulling a three-speed transmission.

When one produces a car with a less-than-90-inch wheelbase and two-wheel independent suspension, the ride is predictable — much as we experienced in the Datsun. On the plus side, the Bluebird sedan has found the fine line that reduces choppiness to a minimum while retaining a stiff enough spring rate to keep the car controllable while recovering from sharp dips. It follows that the Fair Lady, with stiffer suspension, rode a little harder. We did not consider either uncomfortable.

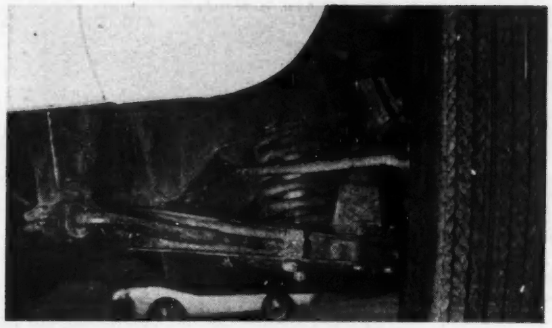
But there are other factors which invariably influence one's opinion about ride, not the least of which is seating and its relative comfort. We liked the Fair Lady's simple bucket-type, foam-rubber-padded seats. Built on a fiberglass shell, 8½ inches off the floor at the front cushion edge, they measure 18 inches wide by 19 deep. The depth proved to be adequate for proper thigh support and the curved backrest did a good job of holding passengers in place. With a four-inch adjustment to the maximum of 47 inches from backrest to toeboard, there is plenty of leg- and kneeroom around the steering wheel — except possibly for a driver built along the lines of a Wilt Chamberlain. In contrast, the Bluebird was judged not to have enough front seat room for real comfort for anyone in the neighborhood of five-ten. At maximum rearward seat travel, there is only 42 inches between backrest and toeboard. Compounding this is a steering wheel an inch closer to the seat than in the convertible. The result was an uncomfortable situation between knees and wheel for average-height drivers which would probably be very annoying for a lanky American.

Those potential sports car buyers who have been clamoring



Taking down the Fair Lady's convertible top is a simple matter of snapping off the fabric. Tonneau cover is standard equipment. With this position there are quite a few wind currents in cockpit.

The sedan has a definite advantage over the sports car in the amount of luggage space. Usable area is 50 inches wide, 23 deep.



Front suspensions differ in the basic type of springing. Bluebird has conventional coils, while the Fair Lady has stiffer, longitudinal torsion bars.

FOR SOME LANKY AMERICANS THE LITTLE SEDAN WILL NOT BE TOO COMFORTABLE. THERE ARE 42 INCHES BETWEEN BACKREST AND TOEBOARD.

Hard cornering induced considerable lean, more noticeable to observers than to driver. Handling and control under these conditions were considered good.

Datsun Sports Car and Sedan

continued

for years for a true four-passenger sports car should take heart in the Fair Lady. The feat is accomplished. Unlike a number of current roadsters with areas called rear seats, the Fair Lady will carry two adults, offering in the process a 17- x 17-inch seat with a backrest the same height, full 36-inch headroom (an inch more than the front seats) and adequate kneeroom as long as the front seats are adjusted even slightly forward. Because the rear seats are only 10½ inches from the floor, knees tend to shoot upward, but it is better than any other current sports car rear seat.

Upholstery and interior finish are in keeping with the cars' budget-priced character — complete and simple, but not plush. Seats are covered in a soft vinyl with a sort of rubbery texture and an unusual "fresh plastic" odor. Frankly, we felt that the upholstery material could have been improved in quality without adding to price. Interior appointments are generally well thought out. The sedan has a roomy glove box, four armrests, two ash trays, easy-to-read white-on-black instruments and an excellent heat-vent-defrost system. The convertible is similarly equipped, except that it lacks armrests and its dash storage is an open tray. Luggage capacity is extremely limited in the Fair Lady. The Bluebird provides a good amount of space. Usable area measures approximately 50 inches wide, 17 high and 23 deep.

Both cars had an excellent transistor radio ($65 extra) with a unique system for locking the antenna flush with the body, keeping it wholly tamper-proof.

The convertible's top is a completely snap-off affair that affords good visibility via a three-piece wrap-around rear window despite the rear quarter areas being enclosed. A big vision aid is use of two fender mirrors, standard equipment. Simple side curtains efficiently kept out weather and wind. Without curtains and with top up we experienced a great deal of wind buffeting which added to a fairly high wind noise level. In fair weather, of course, most sports car owners leave tops down. Removing the Fair Lady's top and installing the tonneau cover (standard equipment) kicked up numerous wind currents into the cockpit. Perhaps the use of a curved windshield would be helpful; the flat glass didn't offer quite enough protection.

The sedan is quite another story when it comes to noise level. Although the engine buzzes away mightily at fast cruising, leaving no doubt that it's out front, the sound was not objectionable. Wind noise was quite low with windows closed, increasing very slightly with door vent panes opened for perfectly ample air circulation. As small sedans go, we found that Bluebird to be one of the quietest on the market.

The stopping distances recorded on our chart speak for themselves. Both cars stopped quickly under panic conditions. The Fair Lady stopped in shorter distances, as befits a sports car, because it has more brakes — bigger diameter, wider linings.

We seldom drive our test cars for maximum economy — even those classed as economy cars. We prefer to keep up with traffic, roll along highways at top legal speeds, driving insofar as possible as we feel most owners will drive. That is why our fuel

As befits a sports car, the Fair Lady has bigger bite at wheels — larger tires and more effective brakes.

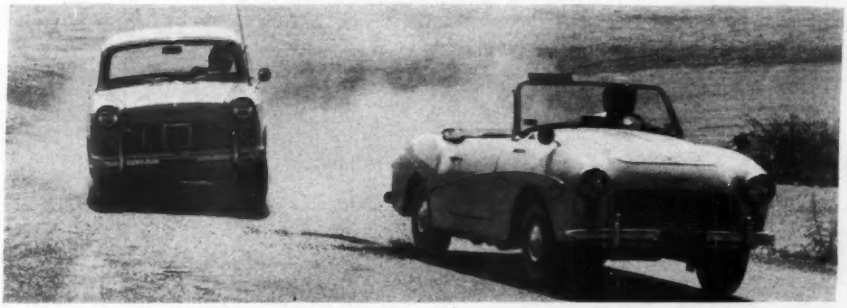
Also typical of sports cars, Fair Lady's luggage compartment had room for little more than spare, folded top.

consumption figures are often poorer than they might be if the road portion of the test were run as a featherfoot derby. Gasoline mileage on the Fair Lady convertible worked out to a 23-26-mpg range; the Bluebird burned fractionally less gas under the same rigorous conditions, pushing its way almost to 27 mpg. There is one feature common to both cars that would definitely increase mileage if properly used. The carburetor is a two-throat with progressive linkage. Feeding the second throat requires slight extra pressure about two-thirds way down on the accelerator pedal. Using only the first stage, reserving full open for passing, would undoubtedly show up on mileage figures.

Most of us quickly ask one key question about a car — how much? The Bluebird has a suggested West Coast retail of $1696, the Fair Lady is $2132. These prices include everything we had on the cars except the radio. At these prices we feel that both are quite reasonable buys, depending upon requirements. The sedan is bucking a couple of firmly entrenched economy sedans, although it has a definite horsepower advantage. The convertible truly fights no one, mainly because of its rear seat feature.

The Datsun organization is expanding its dealerships nationally as rapidly as possible. Already there are complete stocks of parts warehoused on both coasts. While they want a share of the U.S. market, it accounts for a very small part of their worldwide sales throughout Asia, Australia, South America and into Mexico, where an assembly plant is being opened. In spite of this, U.S. sales are important enough to the giant Nissan Motor Company to cause them to send engineers here, equipped with engine, body and chassis test equipment, to determine just how a car should be built for our widely varying roads.

With the proper approach and good cars they intend to make even better, Datsun will soon have quite a number of Americans driving cars marked Made In Japan. /MT



DATSUN FAIR LADY CONVERTIBLE

4 passengers

OPTIONS ON CAR TESTED: Radio
ODOMETER READING AT START OF TEST: 700 miles
RECOMMENDED ENGINE RED LINE: 5000 rpm

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph	6.1 secs.
0-45 mph	13.9
0-60 mph	24.3

Standing start ¼-mile 24.3 secs. and 60 mph
Speeds in gears @ 6000 rpm
1st....22 mph 3rd....58.5 mph
2nd....35 mph

Speedometer Error on Test Car

Car's speedometer reading	28	42	47	56	66
Weston electric speedometer	30	45	50	60	70

Observed miles per hour per 1000 rpm in top gear....14 mph
Stopping Distances — from 30 mph, 29 ft.; from 60 mph, 156 ft.

SPECIFICATIONS FROM MANUFACTURER

Engine
In-line ohv 4
Bore: 2.875 ins.
Stroke: 2.796 ins.
Displacement: 72.5 cubic inches
Compression ratio: 8.2:1
Horsepower: 60 @ 5000 rpm
Ignition: 12-volt battery/coil

Gearbox
Manual 4-speed, top 3 synchro, central floor lever

Driveshaft
Open, with needle bearing U-joints

Differential
Semi-floating, hypoid bevel
Standard ratio 4.625:1

Suspension
Front: Independent with double wishbones and longitudinal torsion bars, stabilizer bar, telescopic shocks
Rear: Rigid with longitudinal semi-elliptic leaf springs, telescopic shocks

Wheels and Tires
Pressed steel disc wheels, 4J x 14
5.20 x 14 Bridgestone tires

Brakes
Hydraulic drums
Front and rear: 10-inch dia. x 1.75-inch wide

Body and Frame
Box section ladder-type frame, steel body
Wheelbase 86.6 ins.
Track, front 45.6 ins., rear 46.2 ins.
Overall length 158.5 ins.
Dry weight 1960 lbs.

DATSUN BLUEBIRD

4-door, 4-5-passenger sedan

OPTIONS ON CAR TESTED: Radio
ODOMETER READING AT START OF TEST: 3850 miles
RECOMMENDED ENGINE RED LINE: 5000 rpm

PERFORMANCE

ACCELERATION (2 aboard)

0-30 mph	6.8 secs.
0-45 mph	13.1
0-60 mph	25.1

Standing start ¼-mile 24.3 secs. and 59 mph
Speeds in gears @ 6000 rpm
1st....24 mph 2nd....51 mph

Speedometer Error on Test Car

Car's speedometer reading	29	44	49	58	69
Weston electric speedometer	30	45	50	60	70

Observed miles per hour per 1000 rpm in top gear....14 mph
Stopping Distances — from 30 mph, 36 ft.; from 60 mph, 163 ft.

SPECIFICATIONS FROM MANUFACTURER

Engine
In-line ohv 4
Bore: 2.875 ins.
Stroke: 2.796 ins.
Displacement: 72.5 cubic inches
Compression ratio: 8.2:1
Horsepower: 60 @ 5000 rpm
Ignition: 12-volt battery/coil

Gearbox
Manual 3-speed, all-synchro, column shift

Driveshaft
Open, with needle bearing U-joints

Differential
Semi-floating, hypoid bevel
Standard ratio 4.625:1

Suspension
Front: Independent with double wishbones, coil springs, telescopic shocks, stabilizer bar
Rear: Rigid with longitudinal semi-elliptic leaf springs, telescopic shocks

Wheels and Tires
Pressed steel disc wheels, 4J x 13
5.60 x 13 Bridgestone tires

Brakes
Hydraulic drums
Front and rear: 8-inch dia. x 1.4-inch wide

Body and Frame
Box section ladder-type frame, steel body
Wheelbase 88.9 ins.
Track, front 47.2 ins., rear 46.6 ins.
Overall length 153.9 ins.
Dry weight 1960 lbs.

Unique hard top is optional. The unit is in two separate sections, the roof and rear window. It is possible to drive with roof removed, but with window in place.

Deluxe new dash has padding at top and bottom and a lockable glove box. Instrumentation includes five-inch tachometer and 120-mph speedometer of equal size.

A new shape in sports cars aims at the U.S. market

by Gordon Wilkins

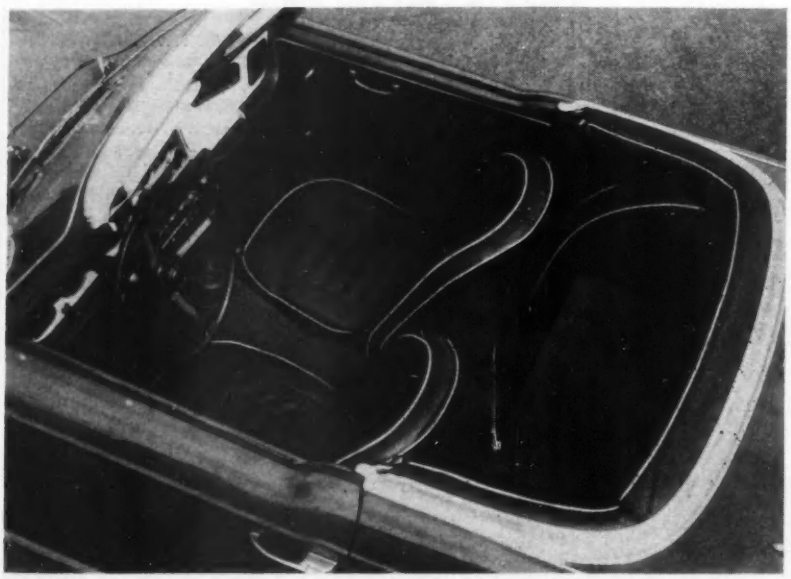
driver's report

The ALL-NEW

AFTER NINE YEARS of popularity with private owners and rally and racing drivers, the Triumph TR-2 and TR-3 have been succeeded by the new TR-4. To date more than 80,000 Triumph TR-2's and TR-3's have been manufactured, nearly 55,000 of which have been sold in the U.S.

Although the styling by Michelotti is entirely new, the TR-4 is recognizably a Triumph. It has been designed primarily for the North American market, and the plan is to export more than 90 per cent of the output.

The 1991cc engine of the TR-3 has now been replaced by a new and more powerful four-cylinder overhead-valve pushrod engine of 2138cc, developing 105 bhp (gross) at 4750 rpm, which has already been tested in the Alpine Rally and other international sporting events. This unit provides particularly good top-gear acceleration, and a maximum speed of over 110 mph. Overall fuel consumption using the maximum power is said to be about 25 mpg (Imperial), and the TR-4 is now also the first British car to go into quantity production with synchromesh on all four forward speeds. Another change is the use of light and positive rack-and-pinion steering. A further new feature is the Impactoscopic steering column as developed for the Triumph Herald models



Luxurious new interior shows a definite increase in the head- and legroom department. Wind-up windows are particularly important addition.

TRIUMPH TR-4

— safety feature is that it collapses on impact in the event of an accident and it also makes the column length adjustable.

The TR-4 is five inches longer and two inches wider than the TR-3, while the track is increased by four inches at the front and three inches at the rear. These chassis modifications have improved road holding, although softer damper settings are employed to give a smoother, more supple ride on rough surfaces.

The interior is more luxurious. Headroom and legroom have been increased. The two bucket-type seats have a wide range of adjustment and give support to the back and thighs. Doors are fully trimmed and have map pockets, and there are now wind-up windows. Instruments, including five-inch tachometer, speedometer to 120 mph with trip and total distance recorders, fuel gauges, thermometer and ammeter, are in a group with a pull-out ash tray. The dash is padded at top and bottom; into it are built a lockable glove box and grab handle.

The top is new, with deep, transparent areas and a wrap-around rear window. It is said to be easy to raise and lower, and there are special attachments and bracings to ensure a tight fit all around, giving freedom from both noise and drafts. The cover for the folding frame forms a padded backrest for children whether the top is raised or lowered, and a seat cushion is available at extra cost. There is a luggage trunk of usable shape with 5.5-cubic-feet capacity and additional space behind the seats for luggage.

The hood is now forward-hinged and is released by a knob beneath the dash for increased safety. The engine is easily accessible, and the panel is automatically supported when open.

There is also a hardtop version of the TR-4. The hardtop consists of two parts — the roof panel and the rear window with its frame. The rear window is the wrap-around type and is bolted to the rear of the car, mating up with the winding side windows. The space between the windshield and the rear window frame is covered by a detachable metal roof panel. If the owner wants open-air motoring this panel is quickly removed, leaving the rear window frame in position to prevent back drafts. In rain or sudden downpours the space in the hardtop can be quickly covered by a cynide top which is called a "surrey top."

The latest engine has a larger bore of 86mm, with unchanged stroke of 92 giving 2138cc, and on a compression ratio of 9 to 1 it produces 100 bhp net at 4600 rpm. Maximum torque is 126.6 lbs.-ft. at 3350 rpm, equivalent to 147 lbs./sq. in. bmep. It has twin carburetors and wet cylinder liners. With an axle ratio of 3.7 to 1, overall gear ratios are: 11.61, 7.44, 4.9 and 3.7 to 1, with reverse of 11.93 to 1.

Suspension is modified only in detail but the frame is strengthened, particularly at the front end. There are wishbones, coil springs and telescopic dampers at the front, with ball joint top steering swivel and trunnion lower. At the rear are semi-elliptic springs with telescopic dampers. Brakes are Girlings; discs at front and cast-iron drums at rear. Center-lock wire

THE STYLING CHANGE (BY MICHELOTTI) IS RADICAL FROM ANY ANGLE, BUT THE CAR STILL RETAINS FAMILIAR FLAIR OF PAST TRIUMPHS.

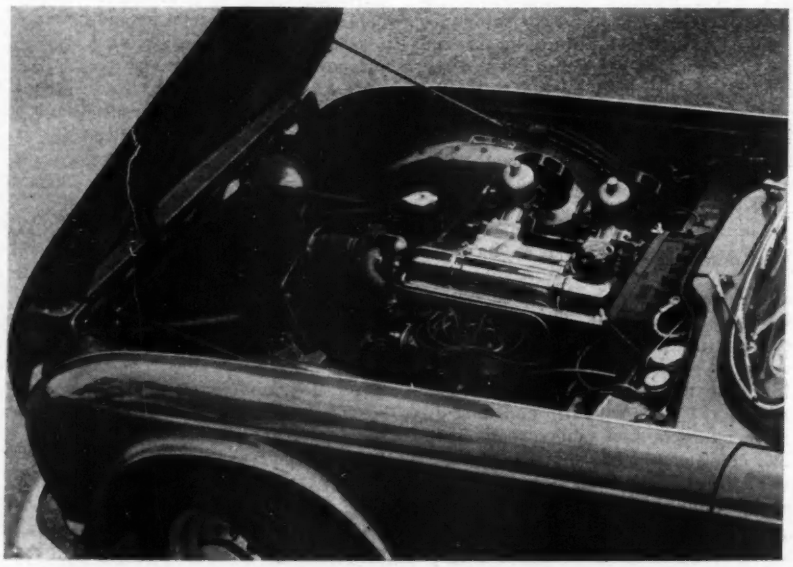
wheels are optional at extra cost, and they increase the track at front and rear by a further inch.

The de Normanville overdrive, operated by a lever under the steering column, is optional at extra cost. It functions on second, third and top, giving a range of seven forward speeds. Fuel tank capacity is 11¾ Imperial gallons, and the car weighs 2240 pounds with fuel, oil and water.

ROAD IMPRESSIONS

The TR-4 is both bigger and far better looking than the TR-3, but it retains a rugged masculine look and a distinct family resemblance. The doors open wide and the seats give good lateral support, though they could be more prominent in the lower part of the backrest. There are controllable fresh-air louvers on each side of the instrument panel. Under the three-spoke steering wheel are two levers; one on the left for turn indicators, one on the right for the optional overdrive which was fitted on the test car. The built-in grab handle for the passenger is well padded, and the radio speaker is in a housing between the seats, where it is highly audible. With the aid of a spanner the wheel can be slid down to a point which permits an extended-arm driving position and there is plenty of elbow room. Pedal positions permit use of heel and toe on accelerator and brake, although the accelerator is placed a little high in relation to the other pedals.

Engine and gears are satisfactorily quiet. Torque at low speeds is good, and in top gear the car will go from 30 to 50 mph in 7.7 seconds. The speedometer needle was waving badly on the pre-production model I tried, but using 5000 rpm as a limit, speed in gears seem to be about 49 mph in second, 56 in overdrive second, 70 in third, 86 in overdrive third and 92 in direct top. In overdrive top I timed it one way over a flying quarter-mile at 111.1 mph, with the instruments showing 115 mph and 4800 rpm. This was with the car open and there was a fair amount of wind scream due to air turbulence. With the top erected and windows shut it should do 114 mph or so. Acceleration figures through the gears were approximately 0-50 mph in 7.5 seconds, and 0-60 in 10.2 seconds.



Modified engine has larger bore, same stroke. Horsepower output is now an even 100. There are twin carbs and wet cylinder liners.

Acceleration tests revealed one flaw in control layout on left-hand-drive cars. Both gear lever and overdrive trigger are worked by the right hand, so one cannot change, for example, from overdrive second to direct third but must take overdrive third if a quick shift is needed.

The ride is more comfortable than on the TR-3, and at the same time the car holds its course better on the straight and seems to have lost the peculiar tail-end twitch in the corners. It can now be steered quite nicely through fast bends with the throttle. The wider track seems to have produced a big improvement in cornering stability and the softness of the suspension becomes apparent only in a quick emergency swerve and counter swerve at high speeds, when there is a fair amount of roll, and a strong grip on the wheel is needed to prevent the tail breaking away.

Hard anti-fade brake linings were fitted on the early car I drove and required fairly heavy pedal pressure from high speeds, but I was able to tramp on the pedal hard at 100 mph to bring the TR-4 to a quick straight-line stop with no dramatics whatsoever. This, I always feel, is a good test of both brakes and chassis.

TR-4 is five inches longer and two inches wider than its predecessor. Track is increased front and rear.

In appearance, performance, passenger space and luggage accommodations the TR-4 represents a big step forward — a civilized sports car in which one can travel fast in comfort.

DIMENSIONS

WHEELBASE: 88 inches
OVERALL LENGTH: 156 inches
OVERALL WIDTH: 57.5 inches
OVERALL HEIGHT: 50 inches
TREAD, FRONT/REAR: 48 and 49 inches (Center-lock wheels add 1 inch to tread)
GROUND CLEARANCE: 6 inches
TURNING CIRCLE: 33 feet
TIRES: 5.90 x 15
TEST WEIGHT: 2240 pounds

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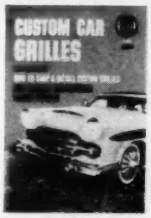

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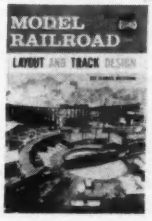

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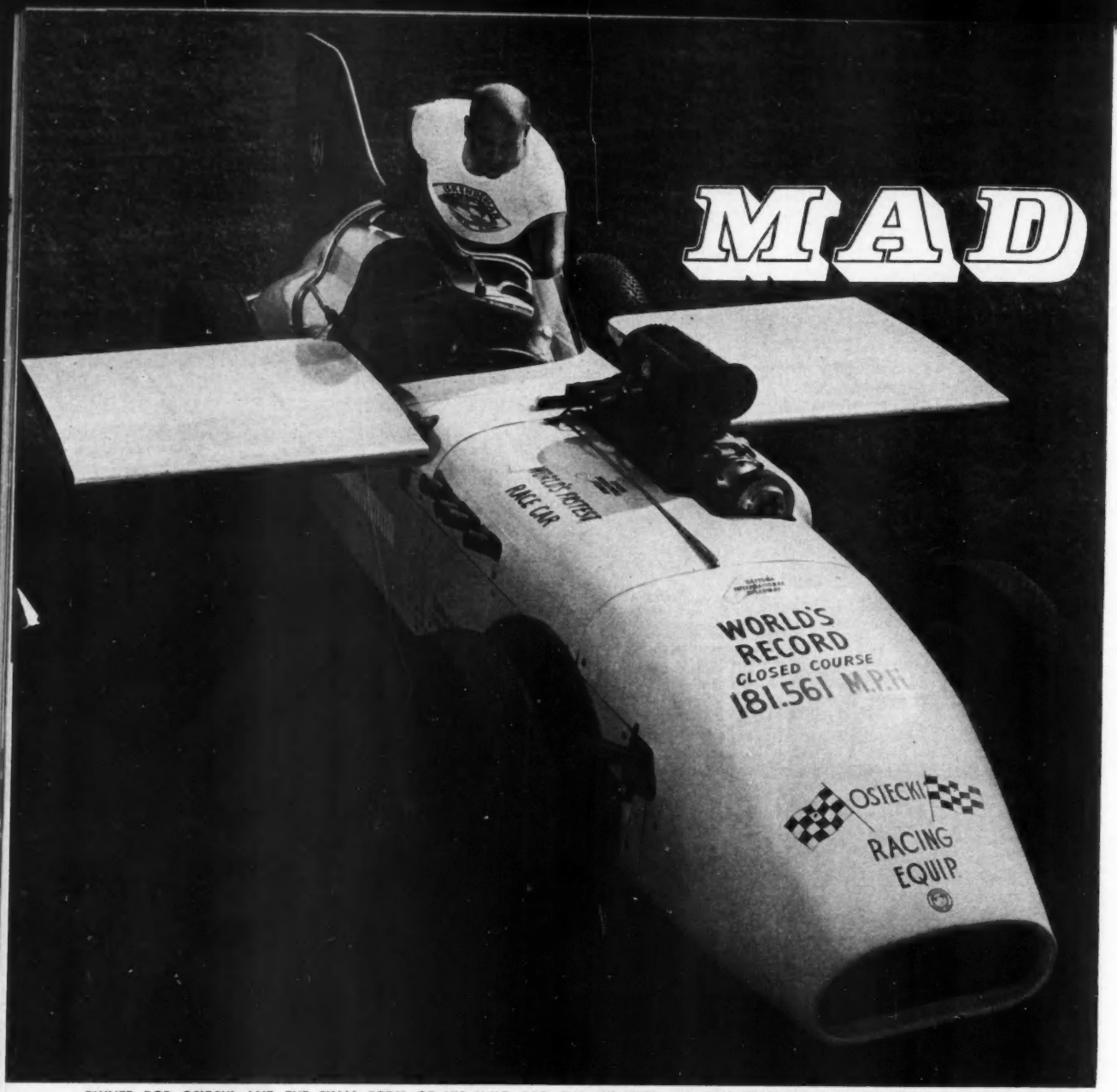
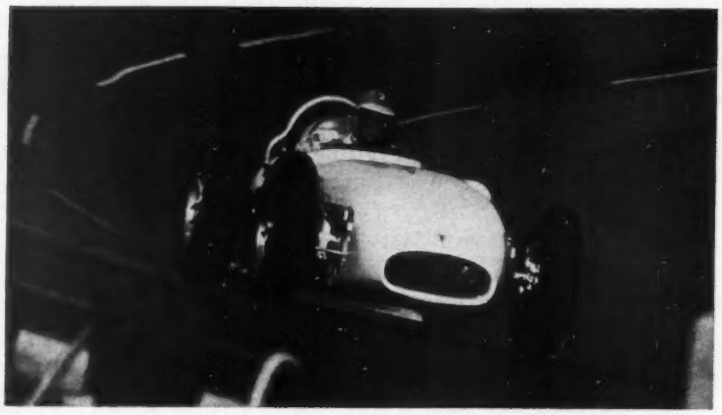


OWNER BOB OSIECKI AND THE FINAL FORM OF HIS WILD CAR. THE INVERTED AIR FOIL SECTIONS AND FIN GAVE IT NEEDED STABILITY.



In its more conventional early days, the car was used for tire testing by Firestone. Its famous driver was Jim Rathmann.

DOG IV

A strange hybrid with aerodynamic control that's captured the world's closed course speed record — and $10,000

BOB OSIECKI and his Mad Dog IV nipped Daytona Speedway president Bill France for $10,000. Sounds like a "dog bites man" story, but it's really the result of a very serious effort on the part of race-car builder Bob Osiecki to collect the special cash prize Bill France offered to anyone who could average 180 mph on Daytona Speedway's tri-oval.

Indianapolis-type cars have hit some fantastic speeds at the Daytona race course, but serious handling problems at these speeds kept existing records down to the high 170's. George Amick set a one-lap record of 176.889 mph with the Offy-powered Bowes Seal Fast Special, and Jim Rathmann averaged 170.261 mph for 100 miles in winning the first Daytona hundred-miler.

In 1958 Frank Kurtis built an Indianapolis car for Ray Nichels, who planned to have Pat O'Connor drive it. After Pat's death, Nichels prepared the car for Firestone tire testing, and Jim Rathmann drove it in excess of 170 mph at Daytona during the tire test program. It was powered by a Pontiac engine. Bob Osiecki had failed in earlier efforts to capture the $10,000 prize offered by France, but in January of 1961 he purchased the Firestone test car and took it to his shop in Charlotte, South Carolina for modification.

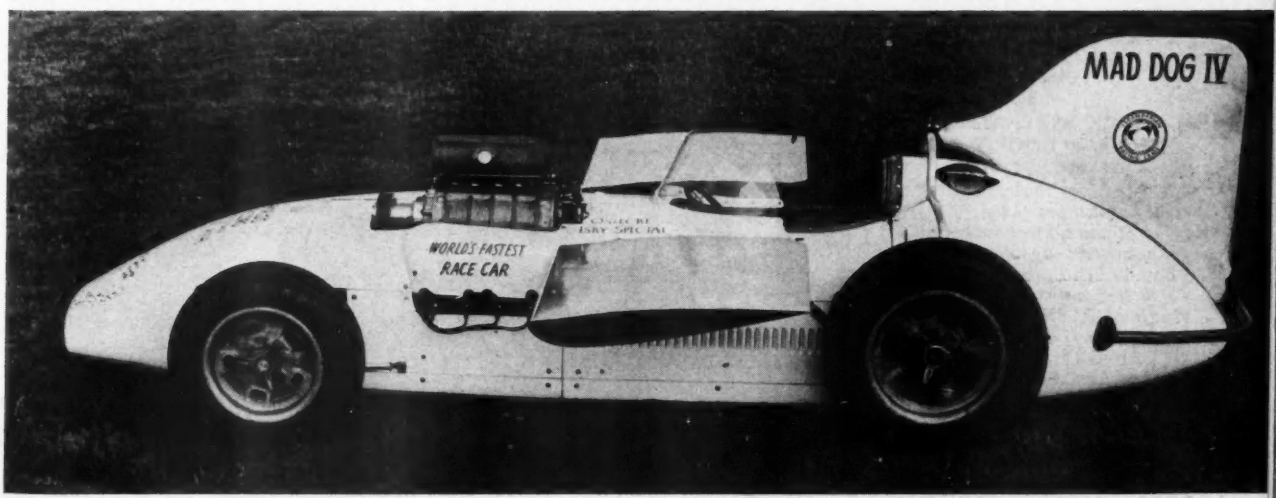
The Pontiac engine was removed and a 413-cubic-inch supercharged Chrysler powerplant with Hilborn injectors that had been rebuilt and tuned at the Iskenderian plant in Inglewood, California was installed. By February the car was back at Daytona, where Brian Naylor of England turned one lap at 157 mph. Changing drivers, Osiecki gave Larry Frank of Greenville, South Carolina a crack at the car and things were progressing nicely, with Larry working slowly up to 166 mph before a 2100-foot spin and slide brought this series of attempts to a halt. Larry was not injured nor was the car damaged, but Osiecki felt that there was need for aerodynamic control and the car was shipped to Georgia Tech for research in this field.

Georgia Tech's Professor Harper, in cooperation with Douglas Aircraft engineers, developed inverted air foil sections protruding from either side of the car, plus a large stabilizing fin at the rear. Mad Dog IV was again ready for another speed attempt by the end of July.

This time, Tampa, Florida drag race driver Art Malone was selected to try for 180 mph. Nearly a month later, after a series of minor mechanical problems, a long skid and lots of practice with the car, Malone turned a one-lap speed of 181.561 mph, completing the 2½-mile closed course distance in 49.57 seconds.

Osiecki is now firmly convinced that aerodynamic control is worth exploring for even higher speeds and believes a 200-mph lap is possible at Daytona. Bill France might just challenge Osiecki to prove his beliefs, and Bob Osiecki is just the sort of man to accept that challenge. /MT

ORIGINALLY BUILT FOR INDY BY FRANK KURTIS, THE MAD DOG IV HAD A POWERPLANT CHANGE TO A BLOWN 413-CUBIC-INCH CHRYSLER.



EUROPEAN REPORT

KARMANN-GHIA BODY ON NEW VW 1500 CHASSIS

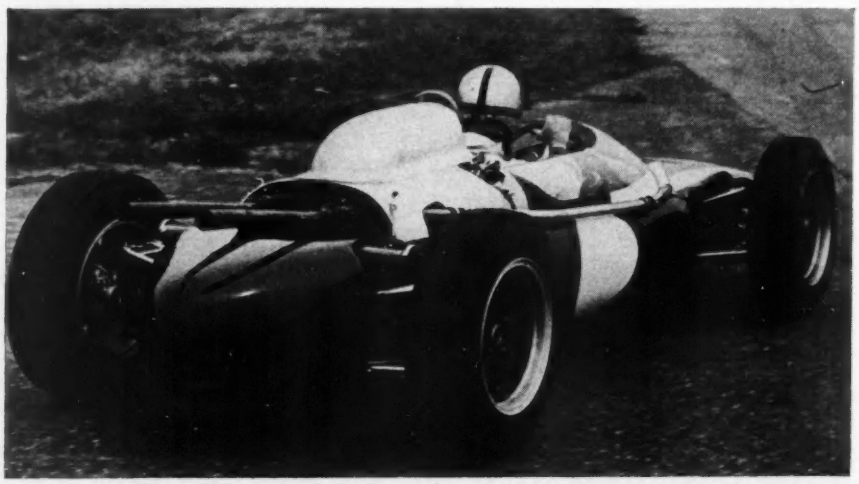
Karmann-Ghia introduced their new 1500 model at the Frankfort show. Completely fresh design bears no resemblance to successful older brother.

ROVER OFFERS ENGINEERING REFINEMENTS FOR 1962

Improved cockpit ventilation, new engine mountings, twin SU fuel pumps and fingertip switch to control shift points of Borg-Warner automatic transmission are some of the 1962 advances that uphold Rover's reputation of producing a truly fine quality car.

JACK BRABHAM IN THE NEW V-8 COOPER-CLIMAX

Cooper has finally received the long-awaited 1500cc V-8 from Climax. First outing netted Jack second fastest time of the day. Weird Bofors gun-type exhaust system is dictated by tuning that required pipes 1 and 4 from one bank being joined to 2 and 3 from other side. Mill produces 174 bhp at 8600 rpm.



A SLIGHTLY FAMILIAR-LOOKING NSU PRINZ 4 MAKES ITS DEBUT

Looking for all the world like a baby Corvair, the Prinz 4 is offered by NSU to supplement the existing Prinz 3 and Sport Prinz. More passenger and luggage space than any but the most advanced 1½-litter vehicles is claimed. Factory quotes standing start to 50 mph in 14 seconds, with average fuel consumption of 50 mpg. Car has all-synchro 4-speed.

FIRST LOOK AT THE MARK X

After several years, Jaguar has finally decided to replace the venerable Mark IX. Soon to go into production is the completely redesigned Mark X Saloon. Plush leather and polished walnut interior is retained. Go comes from 3.8-liter, type "S" engine offering 265 hp.

NEW CONSUL COUPE WITH SPORTING LINES

For the first time a custom-built sports coupe is being offered by the British Ford Co. The 1340cc Capri has deep-cushioned bucket seats, disc brakes on the front wheels and four-speed gearbox. Top speed is said to be over 80 mph.

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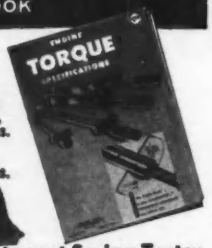

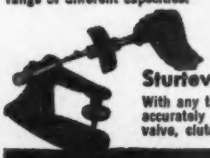

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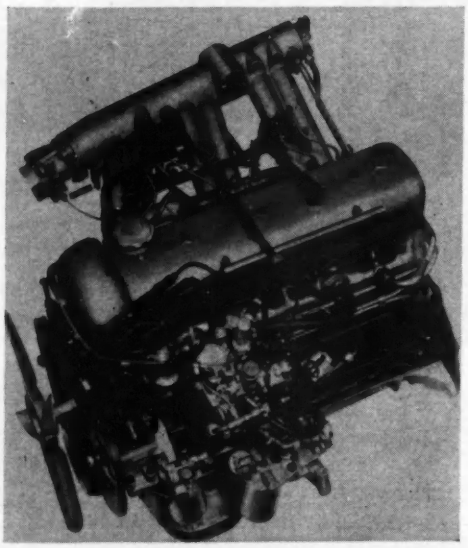
European Report *continued*



300-SE SEDAN HAS BIG-CAR COMFORT WITH SPORTS CAR GO

Most design features of new 300-SE sedan from Mercedes-Benz are "under the body." Comfort comes from air suspension, servo steering and automatic transmission. Fuel-injected engine is derived from previous 300 series, but has been redesigned with a new light alloy cylinder head, block and crankcase.

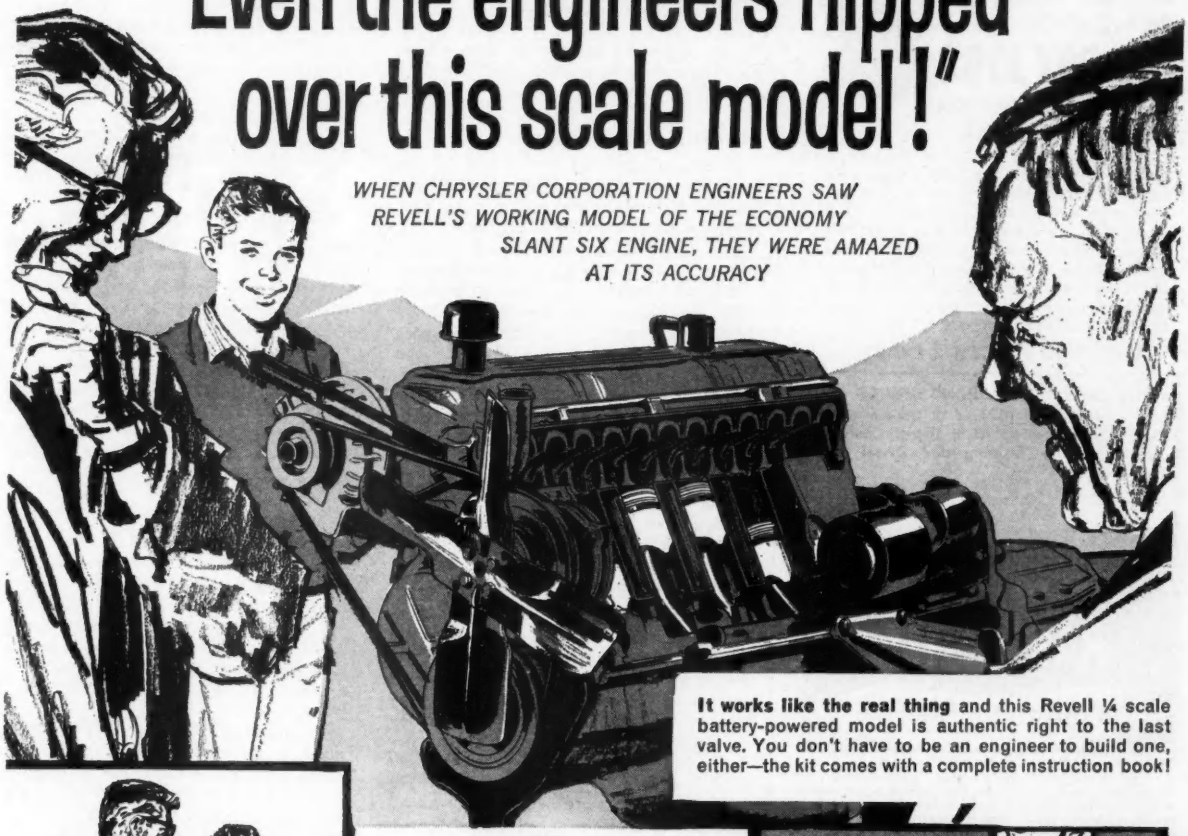
MORE POWER AND ROOMIER INTERIOR MAKE SUPER MINX AN ATTRACTIVE PACKAGE

Clean body lines of the Hillman Super Minx are similar to those of the recently announced Singer Vogue. Super has a 5-inch-longer wheelbase than the standard and uses 13-inch wheels to gain more interior space. Engine is 1.6-liter, 66-hp unit. Prototypes have done 750,000 test miles from Sweden to Kenya.

BILL WEAVER SAYS:

"Even the engineers flipped over this scale model!"

WHEN CHRYSLER CORPORATION ENGINEERS SAW REVELL'S WORKING MODEL OF THE ECONOMY SLANT SIX ENGINE, THEY WERE AMAZED AT ITS ACCURACY



It works like the real thing and this Revell ¼ scale battery-powered model is authentic right to the last valve. You don't have to be an engineer to build one, either—the kit comes with a complete instruction book!

"We designed the real one on a 30° slant," one engineer told Bill. "It made room for a bigger, easier-breathing manifold, so each cylinder runs at top efficiency. That's why this six gives 20% more go on 15% less gas than any we've had before. And it's amazing how Revell has matched every detail of this new engine in their ¼ scale model!"

"You can tear it down—rebuild it—overhaul it," said another engineer. "This model has everything—cooling system, carburetor, pistons, air cleaner—over 300 parts. Every one is molded in authentic colors: red, gray, silver and black."

"The breakaway front is great, lets you watch pistons working, crankshaft turning, spark plugs lighting up—the whole works. I can see how building this model would be fun for anyone—including an engineer!"

Build your own working model Slant Six! Look for this display at your nearby store!

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CAR CLINIC

by Doane Spencer

Doane Spencer, well-known auto expert, will answer readers' technical questions each month. Your letters are invited.

PERFORMANCE *PLUS* ECONOMY

I have always had the largest engine available, with standard transmission coupled to an overdrive and with standard production axle, in my new Fords, since 1957. I have been able to get 16-18 mpg on each one and hate to give up this gas economy.

I have, however, placed an order for a 1962 Ford Galaxie 500 with the 390 high-performance engine, coupled to a four-speed transmission, available this year. As you know, this engine comes with a single four-barrel carburetor. Would I be wise to get the 401 with three two-barrel setup for more mpg, or can I get mpg with the four-barrel?

What axle ratio will be best for this particular power train? I want the car to perform, but I also want to get fair gas mileage too. With proper driving habits can I get 16 mpg?

Cecil D. Martin Dove Creek, Colo.

From our personal experience, the three twos get a little better gas mileage than the big four, because you can feel when you are about to open the additional carburetors, and in that way you are more conscious of keeping your foot out of the accelerator.

The most economical arrangement would be 4.11:1 with overdrive. As yet, Ford has not released any dope on its new overdrive for the four-speed, which is hydro-operated — an operation which is very similar to that of the Healey or Jaguar overdrive, which, without a doubt, would be the way to go.

If you order your car with the four-speed, we would suggest 3.89 as a final drive. In this manner, you will get good acceleration and about 14 miles to the gallon with moderate driving.

RAMBLER PROBLEMS

I have a '61 Rambler Six, cast iron, with overdrive and a single-barrel Holley carburetor. The car starts good, gives excellent mileage and generally runs good when cold — not so good when hot. It develops a hesitation or sputter on full throttle. The warmer the engine, the worse the hesitation. Along with this, a cloud of black smoke pours out of the exhaust.

I've checked everything I can think of. Can you help me?

Ronald Guntle Dixon, Ill.

From your letter, your troubles stem from the rpm rather than the temperature — or so it seems. You may find that the fuel pump, when the engine speed is increased, is too much for the float valve to handle and is sinking the float and, therefore, is increasing the fuel level.

This may easily be checked by removing the fuel line to the carburetor and running it to a pressure gauge. The pressure should be 4 to 4½ psi. You might also check the accelerator pump for the correct discharge nozzle size. It should be .028-inch.

On cars equipped with diaphragm accelerator pumps you will find that the engine heat, on shut down, will make the diaphragm expand and fill the engine with raw gas. This may be eliminated by drilling a small (#80 drill) hole from the float chamber into the accelerator pump well.

AXLE RATIOS

In the January MOTOR TREND you explained about overdrive. But there is one more thing I would like to know, that I can't figure out.

My Ford has a 2.91 axle. With a 3.56 axle and overdrive, with what axle ratio would the two compare?

Nelson Jenkins Jasper, Ind.

When figuring your final gear ratio when the car is equipped with overdrive, you must multiply by 30 per cent, which is the ratio of the Ford overdrive. In other words, 3.56 x .30 = 1.068 or 1.07. Then subtract 1.068 from 3.56, which will give you the final drive. The easy way to figure it is to multiply by .7, which saves you one step — 3.56 x .7 = 2.492.

GEARING FOR ECONOMY

I have a 1957 Pontiac Star Chief, with a gear ratio of 3.23:1. What gearing would be possible to put in the rear end to give better gas mileage?

I thought of putting a gear ratio of 2.87:1, but have been told that is for a later model and will not work in a 1957. So now I am appealing to you for the last word.

Would it be worth the cost? About how much better mileage would I get on the highway? I have found that it could cost close to $70, but the only ratio that I could substitute would be the 3.08:1. Do you think that would warrant the change?

I know I will lose some snap, but would be willing to sacrifice the snap for better gas mileage.

R. J. Martin Chippewa Falls, Wis.

Your 1957 Star Chief has a large selection of gears from which to choose — 2.87, 3.08, 3.42, 3.64, 3.90. But to get back to your gears — the highest gear is not always the most economical, as it would require more throttle opening to achieve the same speed.

Now figuring 15 miles to the gallon, you are spending about two cents a mile for gas. By installing the 3.08's you might increase your mileage by one mile to the gallon under optimum conditions. At this rate, in 3500 miles you will have paid for the gears, but not for the discomfort of the lack of acceleration.

I believe you now have the ideal gear for both cruising and economy.

LARGER WHEELS

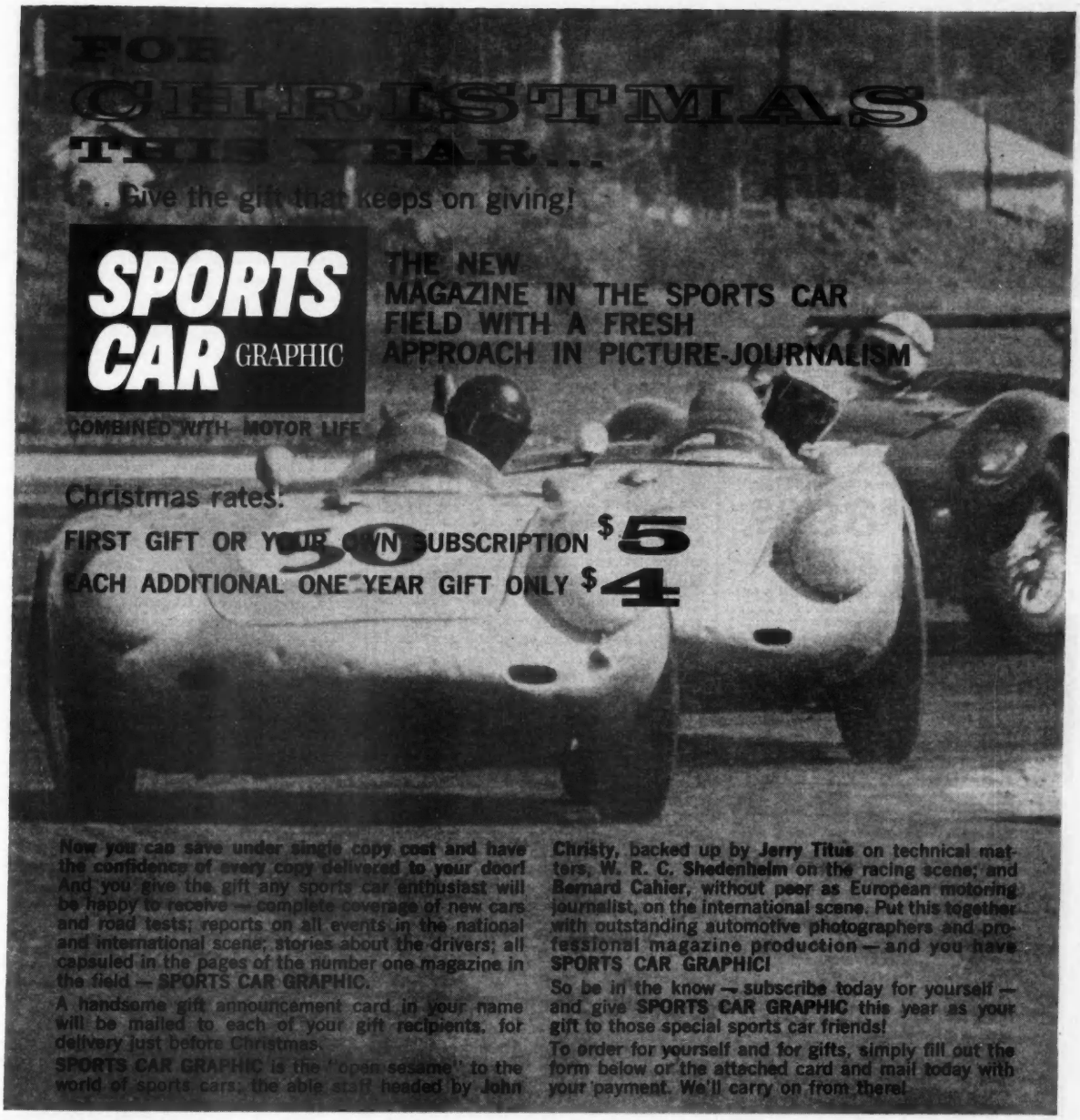
I own a 1961 Comet. Can you tell me if it would be advisable to replace the 13-inch wheels with 15-inch wheels?

Can you tell me the pros and cons of replacing with larger wheels — is there more to it than just changing of the wheels?

R. A. Hartzell East Lansdowne, Pa.

The Ford Motor Company doesn't make an optional 15-inch wheel for the Comet,

continued on page 76



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WASHINGTON, D.C. Sports Motors Ltd. 3912 5th Rd. No., Arlington, Va. JA 4-1165
IN CANADA ◇◇◇ Eurocan Motor Products Ltd. 9010 Park Ave., Montreal 11, Que. DU 1-7466
New York Distributors, U.S.A. Factory Representatives
KENSINGTON PRODUCTS CORP.
Dept. MT, 240 West 60th St.
New York 23 JU 2-9343
Sold for PORSCHE by all their distributors

What's it like to drive the CHEVY II?
Find out in next month's MOTOR TREND

CAR CLINIC

continued

but the 1957-'58 Rambler wheels will fit, which will give you about one-half to one-inch additional road clearance, depending on which model you have.

With your present gear ratio, it is doubtful that the change would be a wise one, as we feel that a lower gear would be more advisable.

If you still feel that you want the higher ratio, it would be a little cheaper to go to a 7.00 x 13 Econoline tire than to a 15-inch wheel and 6.00 x 15 tire.

FUME BURNER

I have a 1960 Falcon station wagon and have been thinking of having a fume burner installed – that is, running a ¼-inch copper tube from the breather pipe into the carburetor.

Some mechanics say it will cut the life of the engine in half – others say it does not harm the engine.

Will the fume burner, without a filter, harm my engine? Secondly, will it help gas mileage very much?

Lloyd E. Groenke Avilla, Ark.

You apparently have an early 1960 Falcon, as most of the late '60 and '61 models already have Positive crankcase ventilation.

You may purchase all the necessary parts to convert your '60 at your local Ford dealer's for $6.73. The parts list is as follows: CIDE 6A666B valve – $3.06, CIDE 6A664A (2) hoses – 30¢, CIDE 6759A tube – 94¢, CIDE 6A665B adapter – $1.53, and 3745855 manifold – 90¢.

PROPER OIL

I have a question concerning proper oil for an automobile.

I have recently purchased a 1961 SAAB. The service booklet contains the statement: "To insure long trouble-free engine life, only high-quality two-cycle (outboard motor) oil of either 30 or 40 weight should be used when refueling the SAAB automobile."

What is the distinction between two-cycle oil and the oil used in American automobiles? Isn't it possible to use a good non-detergent oil purchased from service stations?

Howard Donaldson Westover AFB, Mass.

Any good motor oil may be used in your SAAB.

Basically, two-cycle and four-cycle motor oil are the same. In some instances, some oil companies do not differentiate between the two. In the oils that are listed as two-cycle the properties and additives, that on burning would leave a residue, have been removed or substantially reduced.

BLOWN FREEZE PLUGS

I have a '57 Golden Hawk, with a Packard 296 engine in it. I bought the engine complete with blower for my Hawk, and it keeps blowing freeze plugs when the engine is turning up high rpm's. Also, how can I tell if the blower is working perfectly?

Water circulation seems to be good – it does not need water or run hot except when the plugs blow out. I also had the radiator cleaned and checked. Could I have the wrong pressure cap on it?

I drive the car between Oklahoma City and Dallas each week, and it's driving me nuts!

Gordon Purves Mid West City, Okla.

Your trouble apparently stems from a bad freeze or welch plug hole, which is brought on by pressure in the cooling system. This may be normal radiator cooling system pressure or a bad head gasket, cracked head and/or port, which in any case should have no effect on a correct and properly installed welch plug.

We should suggest that you check the freeze plug and hole carefully for hammer damage, out of roundness and correct installation. You may check the installation of the plug with a radiator cap checker. This enables you to pump the cooling system up to any desired pressure by hand.

A manifold pressure gauge will tell you the output of your blower and may be purchased from either Paxton Products or Eelco Manufacturing, both of Inglewood, California. See our advertisements.

MIRACLE CARB

Quite regularly there seem to appear letters inquiring as to the existence of "super-mileage" carburetors, and always, these rumors are discounted. In a recent issue of a sports car magazine, a certain Lou Schorsch claims to have developed a carburetor that yields 36 miles to a gallon of gas in a Buick.

At last we have a single definite claim by an individual regarding this matter. It is my hope, therefore, that you might be able to personally interview this man and either run your own test on his car or else prove him a big faker.

Tim Shevlin Scarsdale, N. Y.

The man who is able to produce a carburetor that can get this sort of mileage under average conditions will also be able to walk on fire barefoot.

Ninety-nine chances out of a hundred, phenomenal improvements in gas mileage have nothing whatsoever to do with the carburetor.

REMOVING THERMOSTAT

I own a 1958 Pontiac (Canadian) with a 283-cubic-inch V-8 and I am having trouble with engine overheating. All of my driving is on the highway, and I change my anti-freeze every spring, add water and a rust resistor.

A GM dealer and a service station operator told me to remove my thermostat for summer driving – they say it will not harm the engine in any way.

Before doing so, I would like your opinion. I have heard that you should never drive without a thermostat.

G. Wyngaert LaFleche, Que., Canada

Do NOT remove the thermostat. Such a practice will not make the engine run cooler. It will actually increase engine wear, because it will cause the engine to take longer to warm up.

If your engine is running hot, the radiator tubes may be clogged with pieces of rubber sloughed off the inside of the radiator hoses, or you may have a high-pressure head gasket leak. /MT

JC WHITNEY & CO Buy with Confidence—Satisfaction Guaranteed or Money Back!

Engine Swapping Handbook

Here is a "how-to-do-it" book of engine swapping. Covers late model OHV engines, with step-by-step method of installing into older cars and compacts. Includes information on installing Cadillac into Ford, Chevrolet into Ford, and Chevrolet into Studebaker, plus late Chevrolet into early Chevrolet and others. Lots of electrical circuit changes, information on adapters, engine weights, suspension and chassis data. Its 106 pages include lots of photos. Edited and published by Floyd Clymer

No. 260—Each..... $2.00
POSTPAID.....

Ammeter & Oil Gauge Kit

FOR ALL CARS WITH RED WARNING LIGHT

All cars with warning lights for Oil and Battery need these gauges. At a glance ammeter tells Rate of current flow. Oil pressure gauge tells Exact oil pressure.

A much needed addition to the warning lights provided on many cars. Warning lights indicate whether or not the generator is working, or when oil pressure falls below 15 lbs., rather than the exact rate of charge or discharge and exact oil pressure. These calibrated gauges show exact conditions so that any faults can be remedied at once. Consists of 60-0-60 Ammeter 2½" diameter and 80 lbs. oil pressure gauge 2½" diameter in Twin Gauge Panel for easy under dash mounting. Easy to follow hook-up and installation instructions come with each unit. Fittings included.

No. 27 —Kit $4.95

Spun Aluminum SNAP-ON RACING WHEEL DISCS

NOTE: The SNAP-ON fingers hold disc to wheel securely. Best for easy installing and removing.

Designed for beauty—engineered for speed. These new spun aluminum racing wheel discs will add new splendor to any car. Engineered with gentle curved lines to reduce wind resistance to a minimum—have no indentations or protrusions. Their sleek, graceful lines—smooth aluminum finish will enhance the appearance of any car. Snap on securely to wheel—can't shake or fall off—will not affect wheel balance. Easily installed on any 14", 15" or 16" wheels. Sold per each or in sets of 4.

Specify 14", 15" or 16"
No. 327 Set of 4 $9.95 | No. 376 Each $2.75

PIN STRIPING

The Newest and Latest Custom Design
Choice of White, Gold, Black, or Red

Ready made original design striping, easily applied in minutes. Can be applied on any clean, dry surface. Will not chip, peel or fade. Kit contains fifteen decals in nine different designs up to 4½".

Will stripe an entire car; fenders, trunk lid, hood, skirts and other parts. Specify color when ordering. White, Gold, Black, Red.

No. 336—POSTPAID. Per Kit $1.00

New, Low Cost BATTERY CHARGER For 6 or 12 Volt Batteries

Keeps any 6 or 12 volt battery at full strength at all times—prolongs battery life.

This new battery charger is a scientifically accurate electronic device that will keep your battery at full charge—no matter the weather or periods of inactivity. Just plug battery charger into any convenient outlet in the garage, home or farm—connect terminals to battery—and your battery will maintain its full charge at all times. Extremely low current draw—only ½ amp.—can't overload your electric lines. Automatic circuit prevents overcharging of battery. Trouble light indicates incorrect hook-up. Just flip selective switch for either 6 or 12 volt charging. Compact 4½"x 5½"x2½" size makes charger easy to handle and store. Complete with 5-ft cord and 30" leads, terminal clamps.

No. 88 ..... $7.95

Car Club Jackets

CHOICE OF FIVE DESIGNS

Whether your sport is hot rods, sport cars, boats, motorcycles, here is a jacket that fits any pocketbook or club treasury. It's a colorful, high quality coat that is carefully tailored from the finest Don River sanforized, washable poplin in popular wind-breaker styling. Has such desired features as roomy corded pockets, rain-sliding zipper front, comfortable side elastic inserts—and it is treated with DuPont "Arolon" to make it water and soil repellent.

This classy jacket is available in any of 5 designs: "NO CLUB—LONE WOLF"—"HAVE GOODIES—WILL TRAVEL"—"ROAD DEVILS"—"NIGHT PROWLERS"—or "CAM BUSTERS", which are permanently silk-screened on back of jacket and then flocked for a velvet-like effect. Choice of 3 colors: Red with White emblem, Blue with White emblem, or White with Black emblem. Men's sizes: Small, Medium, Large or Extra Large. When ordering, be sure to specify jacket color, size and emblem desired.

No. 592—Each $6.95

WHEN YOU WANT PLENTY OF NOISE- INSTALL A HOLLYWOOD NOISE MAKER MUFFLER

For all makes of Cars.

- Shell length only 11 inches long
- Overall length 14" Diameter 5"

THE MUFFLER WITH THE LOUDEST R-O-A-R!

- Straight-thru construction with perforated inner core No Packing—No Baffles.
- All Steel Construction with electrically welded seams.
- Universal end caps with bushings make this muffler adjustable to any size tailpipe.
- Complete with clamps and bolts.

No. 581—Each $3.98

THE PREMIUM Safety Belt

- Standard Aircraft type Polished Buckle.
- 2 Inch Nylon Webbing.
- Positive Grip Buckle Holds Securely—Releases Quickly.
- Available in Blue, Green, Gray, Maroon, Black and White. Specify color.

No. 779—Each $4.95

GEAR SHIFT BALLS

CHROME PLATED — SOLID STEEL

- Fits Floor Shift and column shift arms for all cars (except Corvette).
- Fits the pales of the hand for that smooth comfortable grip.
- 1¾" diameter . . . weighs 10 oz.
- Newest style accessory to give your car that finishing touch in customizing.

Gear shift balls are drilled and furnished with bushings to fit any car (except Corvette)

No. 316 ..... POSTPAID. $1.49
Each .....

Hollywood WOLF WHISTLE

Precision Made Intake Manifold Whistle Gives the Wolf Call, Imitates a Barking Dog . . . and Other Effects!

Just add kinds of sounds with this reliable, distinctive, unusual, attracts attention. Easily installed on cars—also ideal for motorcycles, motor boats, and outboard motors. Fits on intake manifold. Whistle is quality made with gray hammerloid finish, complete with wire cable. Installation instructions included, takes only minutes.

No. 61 —Each POSTPAID $2.95

CHROME PLATED WIRE LOOMS

With Colored Grommets — For All Cars

- Eliminates wire sag, keeps spark plug cables from touching hot engine.
- Keeps wires separated and stops spark arcing between cables.
- Easily mounted on valve covers, heads or manifold.
- Choice of colored insulating grommets to add a touch of color to the engine.

No. 129A—with Black Grommets
No. 129B—with White Grommets
No. 129C—with Red Grommets
No. 129D—with Blue Grommets
PAIR $1.49

FUZZY CUSTOM KIT

OVER 9-FT. OF TRIM

Now you can customize your car interior as never before with this new, different, and popular hi-pile fuzzy trim. Kit contains over 9-feet of gummed back pressure sensitive fuzzy trim—enough material to finish and customize dashboard, door mouldings, all interior knobs, horn ring, rear view mirror, etc. Give your car that "way out" look with this new, popular white fuzzy trim.

No. 317 —Per Kit ..... POSTPAID $3.00

Kandy Kolor GEAR SHIFT BALLS

CHOICE OF 6 BEAUTIFUL COLORS

1½" DIAM. — Two extra-large sizes—1½" or 3" diameters. Choose from 6 new eye-catching colors. New oversize gearshift balls of polished bakelite in striking kaleidoscope colors. The latest trend in customizing car interiors. Extremely practical—fits the palm of the hand perfectly for smooth, comfortable gripping. Each size has ¾" threaded brass insert—will fit any car. Available in the following brilliant colors.

3" DIAM.

Color	1½" Dia. No.	Each	3" Dia. No.	Each
Candy Apple Red	1396	1406		
Candy Blue	1398	1408		POSTPAID
Candy Green Mint	1395	1405		$2.00
Candy Pagan Gold	1390	1400		
Candy Burgundy	1397	1407		
Candy Lime Ice	1399	1409		

KANDY APPLE SPRAY PAINT

Now two-coat lacquer paint that gives you the most brilliant, glamorous and spectacular finish you've ever seen! There's nothing like Kandy Apple!

Kandy Apple is the sensational new lacquer paint that has been used on custom show cars throughout the country. This new low pressure soft mist spray gives professional painting results. Can be used on all metal or wood surfaces—great on dashes, window mouldings, motorcycles, wheels, etc. Choose 7 distinctive colors, of which Gold is the undercoat—all other colors are to be used as top coat spray over Gold undercoat. Create your own exclusive combination. 16-oz aerosol can.

Top Coat Color	Stk. No.	Top Coat Color	Stk. No.
Red	2952	Tangerine	2955
Green	2953	Clear	2957
Blue	2954	Gold Undercoat	2956
Burgundy	1950	Gold Undercoat	2956

All numbers per can ..... POSTPAID $2.00

DUMMY TEAR DROP SPOTLIGHTS

Easily Installed On Any Car

The latest in custom styling — a spotlight ornament.

Looks like a genuine tear drop spotlight. Triple plated jewelers chrome. Furnished for sparkling eye-dazzling beauty.

True-to-life dummy spotlights, beautifully shaped with classic streamline tear drop design. Chrome finish and fashion right or left or both. Just move like the real thing. Thrills the latest in customizing and give that professional look. Genuine tear drop spotlight without the expensive, hazardous installation of a regular spotlight. Complete with 5" lens, left and right mounting brackets. Requires only 2½" hole to install.

No. 309—Per Pair $18.95

HOT SPARK INTENSIFIER

For all cars. Pays up all ignition systems—results in faster starting, smoother idling and better gas mileage — overall improved motor performance. Attached easily to any make present coil without special tools. Also improves high speed performance and eliminates plug fouling.

No. 814—
POSTPAID. Each $1.98

BOOKS THAT TELL AND SHOW YOU HOW—

To Fix: Your Ford— Your Chevrolet— Your Plymouth—

FIX YOUR CHEVROLET HAND BOOK

For all models, 1940 thru 1961. 236 pages of instructions and illustrations.

No. 120—Each POSTPAID $2.95

FIX YOUR PLYMOUTH HAND BOOK

For all models, 1946 thru 1961. 240 pages of instructions and illustrations.

No. 119—Each POSTPAID $2.95

FIX YOUR FORD HAND BOOK

For all models, 1946 thru 1961. 248 pages of instructions and illustrations.

No. 119—Each POSTPAID $2.95

Ford Model "A" Service Manual

All engine information on model A's

No. 276—Each—POSTPAID $1.00

CHANNEL TUFTED REAR SHELF COVERS

FOR ALL CARS

Custom Tailored, Vinyl Foam combined with channel tufted simulated leather.

- Choice of two beautiful color combinations.
- Adds the finishing touch to any interior job.
- Adds new beauty to any car interior.
- Easy to install—patterns tailored for exact fit—no cutting or fitting necessary.

Available in the following color combinations:

White channel with red trim.
White channel with black trim.
White channel with blue trim.
White channel with black trim.
Light blue channel with dark blue trim.
Light green channel with dark green trim.

Be sure to specify make, year and exact model of car, color combination desired and stock number when ordering.

No. 158—Each $9.95

Chrome Door Lock Knobs

TRIPLE CHROME PLATED

Chrome colored door lock knobs to all chrome. Customizes interior of car and brightens inside of door. Fits 2 holes to fit all cars listed below.

Stk. No.	CAR	Stk. No.	Car
672	G.M. thru '60	673	All Ramblers
674	61 G.M. All	673	Ford Pass.
673	Chrys. Prod.		(exc. Falcon & Comet)

Specify car, year and model when ordering. Per PAIR ..... POSTPAID . 75c

MANUAL TRUNK RAIL

Streamlines rear deck lid for smooth, compact handle, operate from inside of car. Complete with instructions and diagrams. Easy to install. No. 584—fits Ford 36-60, Merc. 39-60, all G.M. 49-60 exc. 49 Olds 98, 52-59 Chrys., DeSoto, Dodge. 53-59 Plymouth.

State Year, Make and Model.
POSTPAID. Kit $1.49

CAST IRON EXHAUST CUT-OUT

For All Cars with Exhaust Pipes 1¼" to 3½" diameter. Valve is controlled from the dash. Can be used as a cut-out in the country and closed for restricted areas. Can also be used to operate two different toned mufflers. Sturdy cast iron construction. Toned mufflers.

No. 613—Each $3.75

FRONT or REAR END LOWERING KITS

For All Cars With Front or Rear Coil Springs

For Use on All Coil Springs With 6" Clearance Between Coil Centers in the Center.

- Easy, quick way to lower front or rear ends.
- Adjustable 2" to 3" drop.
- Gives a car that 3-in, 1-in-g look.
- Reduces center of gravity—reduces wind resistance for added safety.
- Easily installed—no need to remove "A" frame or springs.
- No cutting, drilling or welding necessary.

Kits are complete with all necessary parts to lower both front or rear coil springs and full instructions.

No. 83 —Per Kit $4.95

MELLOW TONE Fiber Glass Packed MUFFLERS

Custom designed and engineered to fit each make and model of car—no alterations necessary.

Increases horsepower, increases gas mileage, straight-thru construction, no back pressure, no high pitch irritating noises, more powerful non-offensive tones. Be sure to Specify Make of Car, Exact Year & Model, Type of Transmission, Single or Dual Exhaust.

No. 37—Each $4.95

HULA-HULA DOLL SHE SHAKES—BOUNCES SWIMMYS—GYRATES

The newest, hottest car decoration since fox tails and hanging dice — the hula-hula doll that does everything the hula girls in Hawaii do!

Lifelike doll has a simulated green grass skirt and she's strumming a uke—she stands 7" high and can be mounted on any car, on window ledge or dash with ordinary household glue or adhesive. Here's how she shimmies and shakes — her legs and body are connected by a sturdy wire spring that vibrates with every motion of the car, causing the hula doll to move her body like the real thing.

No. 600 ..... POSTPAID $1.00
Each .....

CUSTOM FIT FENDER WELL FENDER-SKIRTS

FOR ALL CARS

REG. $12.95—SAVE 25%— BUY NOW!

- Fits Inside and Mounts Flush with Fender.
- Fits in the Fender Like Factory-Installed.
- Positive Locking Fasteners—Won't Rattle or Fall Off.
- Heavy Gauge Steel—Prime Finish—Ready to Paint.
- EASY TO INSTALL.

54-61 Buick	60-61 Falcon	53-61 Plym.
55-61 Chev.	57-61 Ford	57-61 Pont.
60-61 Corvair	1961 Lancer	52-55 Rambler
60-61 Comet	52-61 Merc.	56-61 Rambler
57-61 Chrys. & De Soto	59-61 Merc.	59-61 Studeb.
53-55 Dodge	49-56 Nash	60-61 Lark
53-55 Dodge	54-61 Olds	60-61 Valiant

When ordering, specify make, year, and model of car.

No. 307—Per Pair $9.95

"LUCKY" Gear Shift KNOBS

Fit ALL gear shift levers

New, novel gear shift knobs—be the first to have them. 8 ball knob is 1¾" in diameter—all black with figure 8 on white background. Lucky dice is 1¾" square — white with black dots. Made of composition plastic.

No. 458—Dice knob ..... each | Postpaid
No. 459—8 Ball knob..... each | $1.75

DUAL MUFFLER SYSTEM for 60-61 CORVAIR

Complete with 2 Fiberglass or Steel Packed Mufflers.

- Reduces back pressure.
- Increases gas mileage.
- Increases horsepower.
- Increases top speed.
- Easily installed in approx. 15 minutes also to buy.

Make(s) or real sports car of the 60-61 Corvair. The simplest, easiest and most economical way to improve the all-around performance of the 60-61 Corvair is to install this dual muffler exhaust system. Eliminates back pressure and loss of compression of crossover pipe and stock mufflers. Mufflers exhaust gases to the rear quickly and lets the engine deliver its top power, its top economy. Kit contains 2 fiberglass or steel packed mufflers with exhaust pipe, tail pipes, clamps, and instructions.

	With 2 Steel Packed Mufflers	With 2 Glass Packed Mufflers
60-61 Corv. Sed.	667 A	668 A
1961 Corv. Lv. Wg.	667 B	668 B
1961 Corvair Pkg.-Up, Greenbrier & Corvan	667 C	668 C

Per Kit $14.95

MONZA STYLE Slim Line WHITE SIDEWALLS

For 13", 14" and 15" TIRES

Converts Tires To Look Like the Latest Narrow Type White Sidewall Tires.

Easy to install — fits snugly against side of tire and is held firmly in place by the rim of the wheel.

Makes black or white wall tires look just like the latest narrow from whitewalls. White from is 1" wide, serrated black trim and raised bead gives the appearance of being an actual part of the tire. Made of butyl rubber. Easy to clean.

No. 712	—For 13" Tires	Set of	$4.00
No. 714	—For 14" Tires		POSTPAID
No. 715	—For 15" Tires		

EXHAUST CUTOUTS For All Cars & Trucks

Fits All Exhaust Pipes to 2½" Diameter. Permits exhaust and fumes to be controlled from dash. Gives you TWO exhaust systems in one. OPEN or EXHAUST system for road and country cruising.

- INCREASED HORSEPOWER
- INCREASED GAS MILEAGE
- FASTER ACCELERATION
- IMPROVED PERFORMANCE
- HIGHER TOP SPEED
- REDUCED ENGINE HEAT

Closed quiet exhaust for city and restricted areas.

Cutout has extended outlet for use with flexible tubing or exhaust pipe, where auxiliary pipe is desired. It is made of heavy steel and all welded construction—actually strengthens the exhaust pipe. Complete with mounting springs to break or fast. New deep valve seat below guard insures safe, leak tight, tension when closed. Angled outlet permits free unrestricted flow through outlet when valve is used to operate two different toned mufflers. Without cutout is complete with mounting bolts, insulating asbestos, and dash control.

No. 46—For All Exhaust Pipes through 2" diameter
No. 318—For All Exhaust Pipes 2¼" thru 2½" diam.

POSTPAID EACH $2.95

FREE!

NEW 356 PAGE CATALOG— JAM-PACKED WITH VALUES

NEW LOW PRICES

THOUSANDS OF NEW ITEMS

This giant 356-page catalog, packed with over 100,000 money-saving items, is FREE with any order for items selected from this advertisement. If you just want the catalog, send only 25c to cover part of handling and mailing cost (refunded on your first $5.00 order).

SPECIAL 8-PAGE MODEL "A" FORD PARTS & ACCESSORIES BOOK. Everything for 28-31 Model "A" Fords. Send only 10c to cover part of handling and mailing cost (refunded on first $5.00 order).

SHIFT LEVERS, KNOBS, AND FLOOR BOOTS FOR ABOVE CONVERSION KIT

Triple Chrome Plated Shift Levers. Improve leverage and performance of all stick shifts. Solid steel with threaded ends — guaranteed not to bend. ½" diameter 12" long. Include hex nut and lock washer. Shift handle lever can be reversed, if desired. Fit all passenger cars with stick shifts. POSTPAID

No. 610 A —Straight | $2.75
No. 611 A —Curved |

Floor Metal Shift Levers.—POSTPAID
No. 622 A —Straight Each 1.88
No. 623 B —Curved Each 1.88

Solid Bakelite Shift Knobs. New handsome oversize round gear shift knobs—full 1½" diameter—fit the palm of the hand perfectly for better grip. Beautifully polished heavy solid bakelite—won't discolor or shrink. Threaded for universal adapter to fit all shift levers. Perfect for all cars, sports cars, trucks, tractors, etc. POSTPAID

No. 611 A —Red $1.00 No. 611 B —Blk $1.00

Beautifully Chrome Plated Steel Shift Knob. POSTPAID $4.25
No. 620 —Each .....

Black Rubber Floor Boots. Heavy duty sports-car style black rubber boots with form fit dome and built-in flange for weather-tight seal over floor board and shift unit. Prevents dust and dirt from getting into shifting mechanism, conserves valuable lubricants. Protects unsightly hole in floor. Easy to fit flat or sloping floorboards. Fits seats to fit all floor shifts. POSTPAID

No. 612 A —Oval Type Each $2.95
No. 612 B —Round Type Each 2.95

SHIFT CONVERSION KITS

STRAIGHT LINE "TRIGGER-ACTION" DESIGN INSURES POSITIVE, CAN'T-MISS - A - GEAR, LIGHTNING - FAST SHIFTING!

FOR ALL CARS with Standard or Overdrive Transmissions $19.95

CONVERTS COLUMN SHIFT TRANSMISSION TO FLOOR SHIFT.

LOW: Pull back as with regular shift.
2ND: Straight forward.
HIGH: Straight back.
REVERSE: Push hard left & forward.
Will outlast and outperform shifts costing twice as much. Spring loaded for speed and ease of shifting gears.
New advanced straight-line pattern permits lightning-fast movement thru the gears.

HERE ARE THE FACTS ON THE WORLD'S FASTEST FLOOR SHIFT CONVERSION KITS

Now . . . install the world's fastest floor shift conversion kit—not at $49.95—not at $39.95—not at $29.95—but at a price that can't be beat for speed—only $19.95 for the complete kit!

Straight-H Speed Shift Conversion has been precision engineered for positive, instant shifting. Designed by speed specialists, this advanced straight-line pattern permits the fastest shifting of the gears without missing a gear. Assures faster shifting, smoother and faster drag times. Just check over the outstanding exclusive features this new floor shift conversion kit has.

Narrow Straight-H Pattern — Straight-line action eliminates the need for complicated diagram above) and slow zig-zag "monkey-motion" found in conventional "H" patterns.

Dual Spring Loading—Two high tension compound springs store more energy—available up to 40 lbs.! for quicker, more positive shifting.

Shift Stick Travel Adjustment — Shift lever travel (stroke distance from gear to gear), may be lengthened or shortened to suit height of operator and style of driving. This exclusive feature is available on all kits for Ford and other make cars.

Self-Aligning Pivot Box—Exclusive design includes a TWO-WAY MOTION Pivot Box which provides accurate alignment of shift arms as it multiplies leverage for easier shifting of gears.

Special "Safety-Pin"—Spring loaded pin mates with relieved-elongated selector slots to provide solid gear selection every time . . . it won't let you miss a shift.

Lightning "Trigger-Action" — Actually shifts gears in a split second. Rolled to perfection for best for competition. Chops off valuable E.T. seconds.

Rugged Steel Plate Construction — Built for hard use on street or drag strip. Fully 50% stronger than most competitive makes.

Guaranteed for Lifetime Service—All critical points are hardened and heat-treated for precision operation and durability.

Fully Guaranteed—Each unit is custom built for perfect fit and is fully guaranteed against defects in workmanship or materials.

Simple, Easy Do-It-Yourself Installation—This new Straight Speed Shift can be easily installed in approximately one hour by anyone. No special tools are required. Complete detailed installation instructions are included. Kit is complete less shifting lever, knob and boot!—these items can be ordered separately, as listed below.

Make Year	Stk. No.	Make Year	Stk. No.
CADILLAC-LA SALLE		COMET	
58-.53 Std. Tr.	597	60-61 Std. Tr.	602
CHEVROLET Pass.		DODGE-PLYMOUTH	
49-54 Std. Tr.	598	57-61 Std. Tr. w/or w/o OD	602
55-61 Std. Tr. w/o OD	599	Lancer	603
w/OD	600	FALCON	
1962 Std. Tr. w/o OD	342	60-61 Std. Tr.	604
w/OD	342	FORD Pass. Cars	
CHEVROLET TRUCKS		40-48 Std. Tr.	604
53-61 Fleet-side	600	49-61 Std. w/o OD	603
		w/OD	603
CHRYSLER-DE SOTO		56-61 HD Inter Tr.	604
57-61 Std. Tr. w/o OD	602	MERCURY	
w/OD	602	49-61 Std. Tr. w/o OD	602
		w/OD	602

Make Year	Stk. No.
MERCURY (Cont.)	
1962 Std. Tr. w/o OD	347
w/OD	348
1962 HD Tr. w/or w/o OD	349
1962 Inter. Tr. w/or w/o OD	346
NASH—See Rambler	
OLDSMOBILE	
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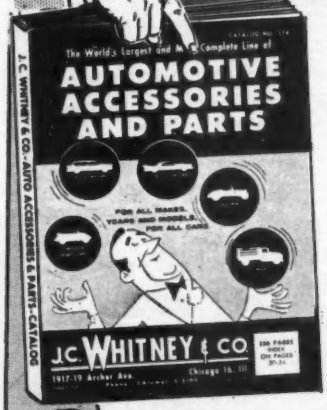
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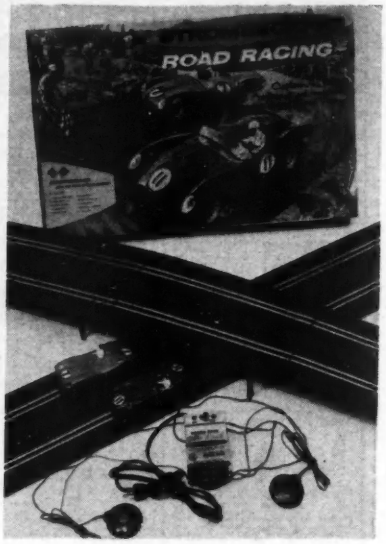

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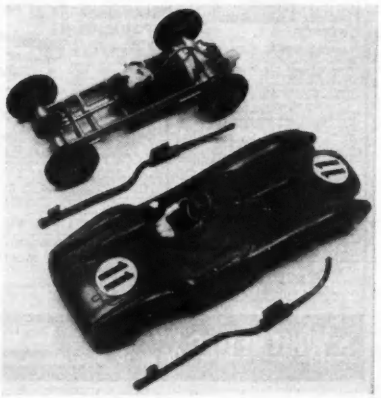

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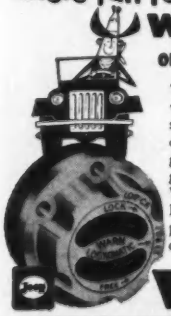

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'31 CADILLAC V-12 close-coupled clb. sed. Perf. body & running gear — very easily restored. Complete, incl. flying lady ornament. $600. R. Flynn, 7 Fletcher Ave., Lexington, Mass.

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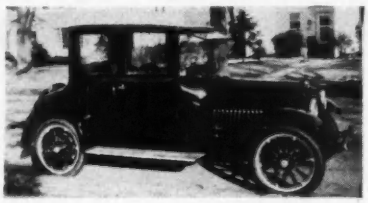

uph. $750. John H. Ray, 814 Forest Ave., Evanston, Ill. Phone GR 5-2006.

'29 PIERCE-ARROW 4-dr. 7-pass. sed. Mod. Std. — Iden. No. 4203. Orig. black paint; exc. cond. H. E. Savage, R.F.D. 1, Rt. 164, Savage Rd., Norwich, Conn.

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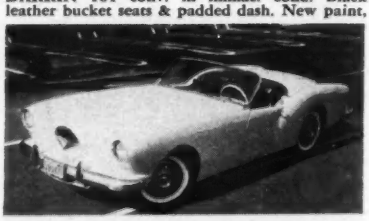

tires, chrome, carpeting; engine reworked. Extra parts & front-end molds. Best offer. D. Powell, Box 1382, Hollywood 28, Calif.

'53 BUICK Skylark. White finish, blue uph., wire wheels. All power, new rubber, good top. Exc. cond.; less than 50,000 actual mi. Best offer takes. Jack William Windt, 1939 Golf St., Sarasota, Fla.

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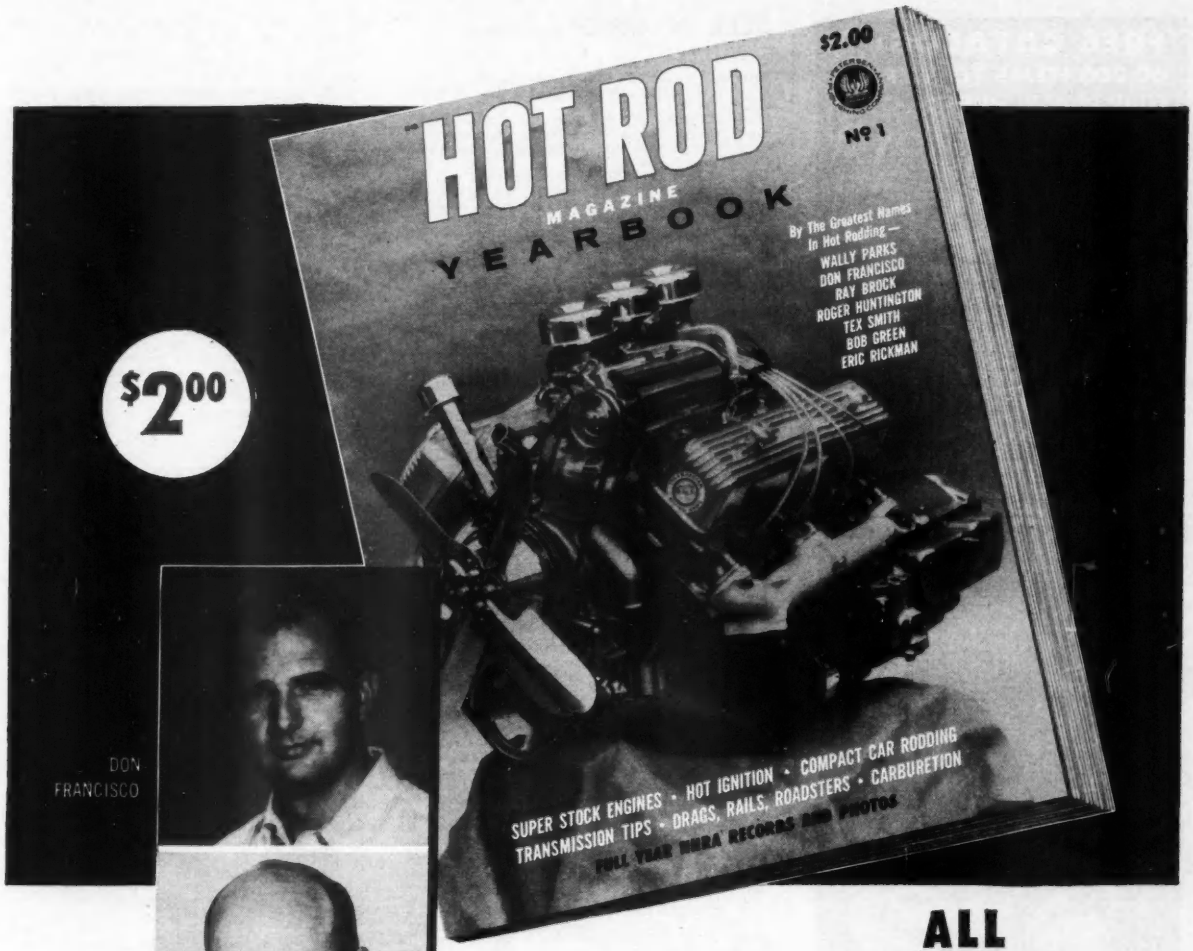
continued on page 82



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'39 CHRYSLER New Yorker 4-dr. sed. Good body, exc. uph., paint & tires fair. Good mech. cond.; 50,000 mi. In daily use. $300. Wayne Atchisson, 1016 S. 6th St., Mt. Vernon, Ill.

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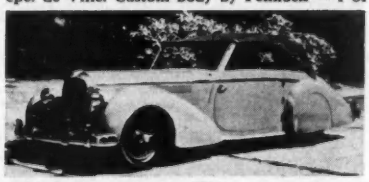
COLLECTORS: Do you collect auto catalogs, photos, manuals, badges? This is your hobby club — monthly bulletin, literature exchange, free info. Auto Enthusiasts, Box 451-D, Mount Clemens, Mich.

FACTORY SHOP MANUALS for imported sports cars & sed., incl.: MG, Austin-Healey, Jaguar, Alfa Romeo, Triumph, Sunbeam, Hillman, Morris, Renault, Skoda, Lancia, Austin, Singer, Rover, Riley, Mercedes-Benz, Porsche, Citroen. List free. Vivian Gray, Hurstpierpoint, Sussex, England.

'54 HUDSON Jet 2-dr. Perf body, uph.; needs rings. Standard trans. $350 for this pioneer compact. L. E. Lueptow, 3505 Cross St., Madison 5, Wis.

'48 DELAHAYE (French) 135 4-pass. conv. cpe. de Ville. Custom body by Pennock — 1 of



a kind. Low mileage. Will correspond with highest bidders. Pix available. G. Austin, 86 Cedarhurst, Detroit 3, Mich.

'37 LAGONDA LG-45 with special coachwork by Bugatti. New paint; body, chrome, uph., tires all good. Engine completely rebuilt — ready to go anywhere. $1500. J. De Bickero, 1022 W. 84th St., Chicago 20, Ill.

'39 MERCEDES-BENZ 540-K — one of the very rare V-type windshield, rumbleseat 2-dr. spt. rdstrs. Mech. perf.; 40,000 orig. mi. Not cheap. J. De Bickero, 1022 W. 84th St., Chicago 20, Ill.

SELL OR SWAP

'47 LINCOLN CONTINENTAL hdtp. Engine conversion & '51 Oldsmobile stick installed by experts. Dark blue; outstanding cond. $1550 or trade. Pix on request. Robert B. Snell, Attorney; Minnesota Bldg., St. Paul, Minn.

'59 MERCEDES-BENZ 220-S. Beige, with leather int., auto. clutch. 37,000 mi. Trade considered. W. W. Teer, 1303 E. 23rd, Odessa, Tex.

'41 GRAHAM Hollywood — one of last built — in exc. cond. $1100; might trade for classic model Packard conv. Mark Trimble, Shepherd of the Hills Farm, Branson, Mo.

WANTED

1/25-SCALE MODEL metal or plastic cars — '48 thru '56. State make, yr., price & cond. in 1st letter. Have some to trade. Fred W. Schumann, 1036 N.E. Tillamook St., Portland 12, Ore.

HARD TOP for '57 Thunderbird. Prefer white with port hole windows. J. Murphy, 800-B Wilson Pt. Rd., Baltimore 20, Md.

ORIGINAL automobile owners instruction books, sales catalogs, shop manuals—any make 1900-'25, classics '25-'35. Also ALAM, ABT, NACC Handbooks. Prices & details in 1st letter, please. R. Pierce, 3517 Dollar Dr., Akron 19, Ohio.

BOYCE SCRIPT MOTOMETERS, classic auto catalogs, MoToR Annual Show Issues, monthlies, ATJ magazines, radiator ornaments & fancy caps. Top prices paid. Sheldon J. Lewis, 154-62 71st Ave., Flushing 67, N.Y.

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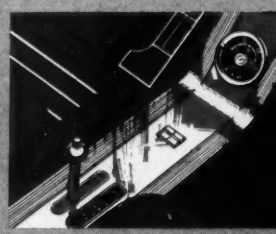

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